PredictBooks Examples

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0.1 Preface

PredictBooks Algorithms conveys accounting concepts using the language of mathematics. Interconnected GAAP formulas form algorithms that generate journal entries.

First, accounting concepts are defined into a vocabulary. Then the relationships between the accounting concepts are mathematically expressed. By expressing concepts in math form instead of in essay form, clarity and precision are gained. Moreover, the math formulas are labeled, and subsequent uses of a particular formula carry the formula's label for backward reference. This labeling and backward referencing provides interconnection. Also, the formulas are sequenced to form algorithms. By expressing accounting algorithmically, the mechanics of accounting become intuitive.

Two companion books comprise this set: *PredictBooks Algorithms* and *PredictBooks Examples*. Moreover, this is a work in progress. Empty sections are placeholders for future work. Complaints, corrections, suggestions, and requests are encouraged. Please email timriley@appahost.com.

Contents

Chapter 1

Revenues and Receivables Examples

1.1 Business Sales: Net Sales

Example 1, Business Sales: Net Sales

A firm's cash sales for the current year were $20,000. Its credit sales were $80,000. During the year the firm granted $4,000 of returns and allowances on current year sales. At year-end, $2,000 more returns and allowances are considered probable on current year sales. The firm uses the gross method to account for sales (cash) discounts and recorded $1,000 of sales discounts during the year. An additional $400 of discounts are expected to be taken with the discount period on this year's sales after the end of the year. Compute net sales for the year.

Solution 1:

1. **Business Sales: Net Sales (1.3.6)**

Business Sales: Net Sales =	+ Sales Amount (1.1.22)	100,000
	– Sales Discount Amount (1.3.4)	1,000
	– Estimated Future Sales Discounts on Current-Year Sales	400
	– Returns on Current-Year Sales	4,000
	– Estimated Future Returns on Current-Year Sales	2,000
Business Sales: Net Sales =		92,600

1.2 Aging Accounts Receivable Method

Example 2, Aging Accounts Receivable Method

Allowance for Doubtful Accounts Credit Balance = $2,000.

	Amount	Uncollectible Percent
Not Yet Due	$40,000	1%
Past Due	20,000	18%

What is the amount of net accounts receivable?

Solution 2:

1. **Allowance for Doubtful Accounts Table (1.5.2)**

	A/R Amount (1)	Uncollectible Percent (2)	Product (1) × (2)
Not Yet Due			
Past Due 1-30 days			
Past Due 31-60 days			
Past Due 61-90 days			
Past Due over 90 days			
	$\sum$ = A/R Debit Balance		$\sum$ = (1.5.1)

	A/R Amount (1)	Uncollectible Percent (2)	Product (1) × (2)
Not Yet Due	40,000	0.01	400
Past Due	20,000	0.18	3,600
	60,000		4,000

2. **Allowance for Doubtful Accounts Ending Balance (1.5.1)**

   Allowance for Doubtful Accounts Ending Balance =

+ Accounts Receivable Not Yet Due × Not Yet Due Estimated Percent
+ Accounts Receivable Past Due 1-30 days × Past Due 1-30 days Estimated Percent
+ Accounts Receivable Past Due 31-60 days × Past Due 31-60 days Estimated Percent
+ Accounts Receivable Past Due 61-90 days × Past Due 61-90 days Estimated Percent
+ Accounts Receivable Past Due over 90 days × Past Due over 90 days Estimated Percent

Allowance for Doubtful Accounts Ending Balance = 4,000

3. **Net Accounts Receivable**
   Net Accounts Receivable = Accounts Receivable Debit Balance – Allowance for Doubtful Accounts Ending Balance
   Net Accounts Receivable = 60,000 – 4,000 = 56,000

1.3 Right of Return Exists: No Estimate

Example 3, Right of Return Exists: No Estimate
Credit sales = $100,000.
Gross profit percentage = 40%.
Cash collected = $60,000.
Sales returns on current-year sales = $20,000 (← credit A/R).
Year-end return privilege not yet expired = $5,000.
Prepare the sales journal entry.
Prepare the cash collected journal entry.
Prepare the inventory returns journal entry.
Prepare the adjusting journal entry.
Note: use 12/31/X5 for all journal entries.

Solution 3:

1. **Cost of Goods Sold Amount (1.1.15)**
   Cost of Goods Sold Amount = Sales Amount (1.1.22) × [1 – Gross Profit Percentage (1.1.25)]
   –OR–
   Cost of Goods Sold Amount = Cost Amount (1.1.23)
   Cost of Goods Sold Amount = 100,000 × [1 – 0.40] = 60,000

2. **Sales Journal Entry (1.10.1)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Sales Amount (1.1.22)	
	Cost of Goods Sold (1.1.14)	Cost Amount (1.1.23) or (1.1.15)	
	Sales Revenue (1.1.1)		Sales Amount (1.1.22)
	Inventory (1.1.10)		Cost Amount (1.1.23) or (1.1.15)

		Debit	Credit
12/31/X5	Accounts Receivable	100,000	
	Cost of Goods Sold	60,000	
	Sales Revenue		100,000
	Inventory		60,000

3. **Cash Collected Journal Entry (1.10.2)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Amount	
	Accounts Receivable (1.1.11)		Cash Amount

		Debit	Credit
12/31/X5	Cash (1.1.9)	60,000	
	Accounts Receivable		60,000

4. **Actual Returns: Current Year Sale (1.10.4)**
   Inventory Adjustment Amount = Quantity Returned × Cost Per Item
   –OR–
   Inventory Adjustment Amount = Sales Return Amount (1.10.3) × [1 – Gross Profit Percentage (1.1.25)]

Journal Entry

		Debit	Credit
XX/XX/XX	Sales Returns and Allowances	Sales Return Amount (1.10.3)	
	Inventory (1.1.10)	Inventory Adjustment Amount	
	Accounts Receivable (1.1.11)		Sales Return Amount (1.10.3)
	Cost of Goods Sold (1.1.14)		Inventory Adjustment Amount

Inventory Adjustment Amount = 20,000 × [1 - 0.04] = 12,000

Journal Entry

		Debit	Credit
12/31/05	Sales Returns and Allowances	20,000	
	Inventory	12,000	
	Accounts Receivable		20,000
	Cost of Goods Sold		12,000

5. **Adjusting Journal Entry (1.10.5)**

Deferred Gross Profit Adjustment = Sales: Unexpired Return Privilege × Gross Profit Percentage (1.1.25)]
Cost of Goods Sold Adjustment = Sales: Unexpired Return Privilege × [1 – Gross Profit Percentage (1.1.25)]

Journal Entry

		Debit	Credit
12/31/XX	Sales Revenue (1.1.1)	Sales: Unexpired Return Privilege	
	Cost of Goods Sold (1.1.14)		Cost of Goods Sold Adjustment
	Deferred Gross Profit (1.1.19)		Deferred Gross Profit Adjustment

Deferred Gross Profit Adjustment = 5,000 × 0.40 = 2,000
Cost of Goods Sold Adjustment = 5,000 × [1 – 0.40] = 3,000

Journal Entry

		Debit	Credit
12/31/X5	Sales Revenue	5,000	
	Cost of Goods Sold		3,000
	Deferred Gross Profit		2,000

1.4 Right of Return Exists: With Estimate

Example 4, Right of Return Exists: With Estimate
Credit sales = $100,000.
Gross profit percentage = 40%.
Cash collected = $60,000.
Sales returns on current-year sales = $20,000 (← credit A/R).
Estimated returns percent = 30%.
Prepare the sales journal entry.
Prepare the cash collected journal entry.
Prepare the inventory returns journal entry.
Prepare the adjusting journal entry.
Note: use 12/31/X5 for all journal entries.

Solution 4:

1. **Cost of Goods Sold Amount (1.1.15)**

Cost of Goods Sold Amount = Sales Amount (1.1.22) × [1 – Gross Profit Percentage (1.1.25)]
–OR–
Cost of Goods Sold Amount = Cost Amount (1.1.23)
Cost of Goods Sold Amount = 100,000 × [1 – 0.40] = 60,000

2. **Sales Journal Entry (1.11.5)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Sales Amount (1.1.22)	
	Cost of Goods Sold (1.1.14)	Cost Amount (1.1.23) or (1.1.15)	
	Sales Revenue (1.1.1)		Sales Amount (1.1.22)
	Inventory (1.1.10)		Cost Amount

		Debit	Credit
12/31/X5	Accounts Receivable	100,000	
	Cost of Goods Sold	60,000	
	Sales Revenue		100,000
	Inventory		60,000

3. **Cash Collected Journal Entry (1.11.2)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Amount	
	Accounts Receivable (1.1.11)		Cash Amount

		Debit	Credit
12/31/X5	Cash (1.1.9)	60,000	
	Accounts Receivable		60,000

4. **Actual Returns: Current Year Sale (1.11.4)**

   Inventory Amount = Quantity Returned × Cost Per Item

   –OR–

   Inventory Amount = Sales Return Amount (1.11.3) × [1 – Gross Profit Percentage (1.1.25)]

   Journal Entry

		Debit	Credit
XX/XX/XX	Sales Returns and Allowances (1.8)	Sales Return Amount (1.11.3)	
	Inventory (1.1.10)	Inventory Amount	
	Accounts Receivable (1.1.11)		Sales Return Amount
	Cost of Goods Sold (1.1.14)		Inventory Amount

   Inventory Adjustment Amount = 20,000 × [1 - 0.40] = 12,000

   Journal Entry

		Debit	Credit
12/31/X5	Sales Returns and Allowances	20,000	
	Inventory	12,000	
	Accounts Receivable		20,000
	Cost of Goods Sold (1.1.14)		12,000

5. **Adjusting Journal Entry (1.11.5)**

   Estimated Returns = Sales Amount (1.1.22) × Estimate Returns Percent

   Estimated Additional Returns = Estimated Returns – Sales Return Amount (1.11.3)

   Deferred Gross Profit Adjustment = Estimated Additional Returns × Gross Profit Percentage (1.1.25)

   Cost of Goods Sold Adjustment = Estimated Additional Returns × [1 – Gross Profit Percentage (1.1.25)]

   Journal Entry

		Debit	Credit
12/31/XX	Sales Returns and Allowances	Estimated Additional Returns	
	Cost of Goods Sold (1.1.14)		Cost of Goods Sold Adjustment
	Deferred Gross Profit (1.1.19)		Deferred Gross Profit Adjustment

   Estimated Returns = 100,000 × 0.30 = 30,000

   Estimated Additional Returns = 30,000 – 20,000 = 10,000

   Deferred Gross Profit Adjustment = 10,000 × 0.40 = 4,000

   Cost of Goods Sold Adjustment = 10,000 × [1 - 0.40] = 6,000

   Journal Entry

		Debit	Credit
12/31/X5	Sales Returns and Allowances	10,000	
	Cost of Goods Sold		6,000
	Deferred Gross Profit		4,000

1.5 Construction Percent-of-Completion Method: Simple

Example 5, Percent-of-Completion Method 20X1
Total Construction Revenues = $900,000.
Costs Incurred = $200,000 (← use A/P).
Estimated Remaining Costs = $400,000.
Billings = $150,000.
Collections = $100,000.

Prepare the percent-of-completion journal entries for the first year.

Solution 5:

1. **20X1 Long-Term Construction: Journal Entry for Purchases (1.20.4)**

		Debit	Credit
XX/XX/XX	Construction In Process (1.20.1)	Cost	
	Cash (1.1.9) and/or A/P		Cost

		Debit	Credit
12/31/X1	Construction In Process (1.20.1)	200,000	
	A/P		200,000

2. **20X1 Long-Term Construction: Journal Entry for Billings (1.20.5)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Invoice Amount	
	Billings On Construction (1.20.3)		Invoice Amount

		Debit	Credit
12/31/X1	Accounts Receivable (1.1.11)	150,000	
	Billings On Construction (1.20.3)		150,000

3. **20X1 Long-Term Construction: Journal Entry Cash Receipt (1.20.6)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
12/31/X1	Cash (1.1.9)	100,000	
	Accounts Receivable (1.1.11)		100,000

4. **20X1 Prior Costs (1.20.12)**
   Let f = The construction project first year.
   Let p = The construction project previous year.
   Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
   Let f = 20X1.
   Let p = 20X0.
   Prior Costs = 0

5. **20X1 Costs So Far (1.20.14)**
   Costs So Far = Prior Costs (1.20.12) + Current Period Costs
   Costs So Far = 0 + 200,000 = 200,000

6. **20X1 Total Costs Estimate (1.20.15)**
   Total Costs Estimate = Costs So Far (1.20.14) + Remaining Costs Estimate
   Total Costs Estimate = 200,000 + 400,000 = 600,000

7. **20X1 Total Gross Profit Estimate (1.20.16)**
   Total Gross Profit Estimate = Total Construction Revenues –
   Total Costs Estimate (1.20.15)
   Total Gross Profit Estimate = 900,000 – 600,000 = 300,000

8. **20X1 Percent Complete (1.20.17)**
   $$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$
   $$\text{Percent Complete} = \frac{200{,}000}{600{,}000} = \frac{1}{3}$$

9. **20X1 Construction Period Revenues (1.20.18)**
   Construction Period Revenues = [Total Construction Revenues ×
   Percent Complete (1.20.17)] –
   Total Prior Revenue Table (1.20.19)
   Construction Period Revenues = $(900{,}000 \times \frac{1}{3}) - 0 = 300{,}000$
   Add this period's revenue to the Prior Revenue Table (1.20.19).

10. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X1	300,000	300,000

11. **20X1 Period Gross Profit (1.20.20)**
    Since Total Gross Profit Estimate (1.20.16) > 0 then:
    Period Gross Profit = [Total Gross Profit Estimate (1.20.16) ×
    Percent Complete (1.20.17)] –
    Total Prior Gross Profit (1.20.21)
    Period Gross Profit = $(300{,}000 \times \frac{1}{3}) - 0 = 100{,}000$
    Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

12. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X1	100,000	100,000

13. **20X1 Construction Period Expenses (1.20.22)**
    Construction Period Expenses = Construction Period Revenues (1.20.18) –
    Period Gross Profit (1.20.20)
    Construction Period Expenses = 300,000 – 100,000 = 200,000

14. **20X1 Percent-of-Completion Revenues Journal Entry (1.20.23)**
    Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X1	Construction In Process (1.20.1)	100,000	
	Construction Expenses (1.20.2)	200,000	
	Construction Revenues (1.20.7)		300,000

1.6 Construction Percent-of-Completion Method: Comprehensive

Example 6, Percent-of-Completion Method:
Total Construction Revenues = 4,500,000.
Other relevant information:

	20X4	20X5	20X6
Costs to Date	$1,000,000	$2,916,000	$4,050,000
Remaining Costs Estimate	3,000,000	1,134,000	–
Progress Billings	900,000	2,400,000	1,200,000
Cash Collected	750,000	1,750,000	2,00,000

Prepare all the percent-of-completion journal entries for three years.

Solution 6:

1. **20X4 Long-Term Construction: Journal Entry for Purchases (1.20.4)**

		Debit	Credit
XX/XX/XX	Construction In Process (1.20.1)	Cost	
	Cash (1.1.9) and/or A/P		Cost

		Debit	Credit
12/31/X4	Construction In Process (1.20.1)	1,000,000	
	Cash (1.1.9) and/or A/P		1,000,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
balance 1,000,000	

2. **20X4 Long-Term Construction: Journal Entry for Billings (1.20.5)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Invoice Amount	
	Billings On Construction (1.20.3)		Invoice Amount

		Debit	Credit
12/31/X4	Accounts Receivable (1.1.11)	900,000	
	Billings On Construction (1.20.3)		900,000

Ledger

Billings On Construction

	12/31/X4 900,000
	balance 900,000

3. **20X4 Long-Term Construction: Journal Entry Cash Receipt (1.20.6)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
12/31/X4	Cash (1.1.9)	750,000	
	Accounts Receivable (1.1.11)		750,000

4. **20X4 Prior Costs (1.20.12)**

Let f = The construction project first year.
Let p = The construction project previous year.

Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
Let f = 20X4.
Let p = 20X3.

Prior Costs = 0

5. **20X4 Costs So Far (1.20.14)**

Costs So Far = Prior Costs (1.20.12) + Current Period Costs
Costs So Far = 0 + 1,000,000 = 1,000,000

6. **20X4 Total Costs Estimate (1.20.15)**

Total Costs Estimate = Costs So Far (1.20.14) + Remaining Costs Estimate
Total Costs Estimate = 1,000,000 + 3,000,000 = 4,000,000

7. **20X4 Total Gross Profit Estimate (1.20.16)**

Total Gross Profit Estimate = Total Construction Revenues – Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,000,000 = 500,000

8. **20X4 Percent Complete (1.20.17)**

$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$

$$\text{Percent Complete} = \frac{1{,}000{,}000}{4{,}000{,}000} = 0.25$$

9. **20X4 Construction Period Revenues (1.20.18)**
   Construction Period Revenues = [Total Construction Revenues × Percent Complete (1.20.17)] – Total Prior Revenue Table (1.20.19)
   Construction Period Revenues = (4,500,000 × 0.25) – 0 = 1,125,000
   Add this period's revenue to the Prior Revenue Table (1.20.19).

10. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000

11. **20X4 Period Gross Profit (1.20.20)**
    Since Total Gross Profit Estimate (1.20.16) > 0 then:
    Period Gross Profit = [Total Gross Profit Estimate (1.20.16) × Percent Complete (1.20.17)] – Total Prior Gross Profit (1.20.21)
    Period Gross Profit = (500,000 × 0.25) – 0 = 125,000
    Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

12. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000

13. **20X4 Construction Period Expenses (1.20.22)**
    Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
    Construction Period Expenses = 1,125,000 – 125,000 = 1,000,000

14. **20X4 Percent-of-Completion Revenues Journal Entry (1.20.23)**
    Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X4	Construction In Process (1.20.1)	125,000	
	Construction Expenses (1.20.2)	1,000,000	
	Construction Revenues (1.20.7)		1,125,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
balance 1,125,000	

15. **20X5 Long-Term Construction: Journal Entry for Purchases (1.20.4)**

		Debit	Credit
XX/XX/XX	Construction In Process (1.20.1)	Cost	
	Cash (1.1.9) and/or A/P		Cost

		Debit	Credit
12/31/X5	Construction In Process (1.20.1)	1,916,000	
	Cash (1.1.9) and/or A/P		1,916,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
balance 3,041,000	

16. **20X5 Long-Term Construction: Journal Entry for Billings (1.20.5)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Invoice Amount	
	Billings On Construction (1.20.3)		Invoice Amount

		Debit	Credit
12/31/X5	Accounts Receivable (1.1.11)	2,400,000	
	Billings On Construction (1.20.3)		2,400,000

Ledger

Billings On Construction

	12/31/X4 900,000
	12/31/X5 2,400,000
	balance 3,300,000

17. **20X5 Long-Term Construction: Journal Entry Cash Receipt (1.20.6)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
12/31/X5	Cash (1.1.9)	1,750,000	
	Accounts Receivable (1.1.11)		1,750,000

18. **20X5 Prior Costs (1.20.12)**
Let f = The construction project first year.
Let p = The construction project previous year.

Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
Let f = 20X4.
Let p = 20X4.

Prior Costs = 1,000,000

19. **20X5 Costs So Far (1.20.14)**
Costs So Far = Prior Costs (1.20.12) + Current Period Costs
Costs So Far = 1,000,000 + (2,916,000 – 1,000,000) = 2,916,000

20. **20X5 Total Costs Estimate (1.20.15)**
Total Costs Estimate = Costs So Far (1.20.14) +
Remaining Costs Estimate
Total Costs Estimate = 2,916,000 + 1,134,000 = 4,050,000

21. **20X5 Total Gross Profit Estimate (1.20.16)**
Total Gross Profit Estimate = Total Construction Revenues –
Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,050,000 = 450,000

22. **20X5 Percent Complete (1.20.17)**

$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$

$$\text{Percent Complete} = \frac{2{,}916{,}000}{4{,}050{,}000} = 0.72$$

23. **20X5 Construction Period Revenues (1.20.18)**
Construction Period Revenues = [Total Construction Revenues ×
Percent Complete (1.20.17)] –
Total Prior Revenue Table (1.20.19)
Construction Period Revenues = [4,500,000 × 0.72] – 1,125,000 = 2,115,000
Add this period's revenue to the Prior Revenue Table (1.20.19).

24. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000
20X5	2,115,000	3,240,000

25. **20X5 Period Gross Profit (1.20.20)**
Since Total Gross Profit Estimate (1.20.16) > 0 then:
Period Gross Profit = [Total Gross Profit Estimate (1.20.16) × Percent Complete (1.20.17)] – Total Prior Gross Profit (1.20.21)
Period Gross Profit = (450,000 × 0.72) – 125,000 = 199,000
Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

26. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000
20X5	199,000	324,000

27. **20X5 Construction Period Expenses (1.20.22)**
Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
Construction Period Expenses = 2,115,000 – 199,000 = 1,916,000

28. **20X5 Percent-of-Completion Revenues Journal Entry (1.20.23)**
Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X5	Construction In Process (1.20.1)	199,000	
	Construction Expenses (1.20.2)	1,916,000	
	Construction Revenues (1.20.7)		2,115,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
12/31/X5 199,000 (1.20.23)	
balance 3,240,000	

29. **20X6 Long-Term Construction: Journal Entry for Purchases (1.20.4)**

		Debit	Credit
XX/XX/XX	Construction In Process (1.20.1)	Cost	
	Cash (1.1.9) and/or A/P		Cost

		Debit	Credit
12/31/X6	Construction In Process (1.20.1)	1,134,000	
	Cash (1.1.9) and/or A/P		1,134,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
12/31/X5 199,000 (1.20.23)	
12/31/X6 1,134,000 (1.20.4)	
balance 4,374,000	

30. **20X6 Long-Term Construction: Journal Entry for Billings (1.20.5)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Invoice Amount	
	Billings On Construction (1.20.3)		Invoice Amount

		Debit	Credit
12/31/X6	Accounts Receivable (1.1.11)	1,200,000	
	Billings On Construction (1.20.3)		1,200,000

Ledger

Billings On Construction

	12/31/X4 900,000
	12/31/X5 2,400,000
	12/31/X6 1,200,000
	balance 4,500,000

31. **20X6 Long-Term Construction: Journal Entry Cash Receipt (1.20.6)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
12/31/X6	Cash (1.1.9)	2,000,000	
	Accounts Receivable (1.1.11)		2,000,000

32. **20X6 Prior Costs (1.20.12)**
Let f = The construction project first year.
Let p = The construction project previous year.

Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
Let f = 20X4.
Let p = 20X5.

Prior Costs = 1,000,000 + (2,916,000 – 1,000,000) = 2,916,000

33. **20X6 Costs So Far (1.20.14)**
Costs So Far = Prior Costs (1.20.12) + Current Period Costs
Costs So Far = 2,916,000 + (4,050,000 – 2,916,000) = 4,050,000

34. **20X6 Total Costs Estimate (1.20.15)**
Total Costs Estimate = Costs So Far (1.20.14) +
Remaining Costs Estimate
Total Costs Estimate = 4,050,000 – 0 = 4,050,000

35. **20X6 Total Gross Profit Estimate (1.20.16)**
Total Gross Profit Estimate = Total Construction Revenues –
Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,050,000 = 450,000

36. **20X6 Percent Complete (1.20.17)**

$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$

$$\text{Percent Complete} = \frac{4{,}050{,}000}{4{,}050{,}000} = 1.00$$

37. **20X6 Construction Period Revenues (1.20.18)**
Construction Period Revenues = [Total Construction Revenues ×
Percent Complete (1.20.17)] –
Total Prior Revenue Table (1.20.19)
Construction Period Revenues = [4,500,000 × 1.00] – 3,240,000 = 1,260,000
Add this period's revenue to the Prior Revenue Table (1.20.19).

38. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000
20X5	2,115,000	3,240,000
20X6	1,260,000	4,500,000

39. **20X6 Period Gross Profit (1.20.20)**
Since Total Gross Profit Estimate (1.20.16) > 0 then:
Period Gross Profit = [Total Gross Profit Estimate (1.20.16) ×
Percent Complete (1.20.17)] –
Total Prior Gross Profit (1.20.21)

Period Gross Profit = (450,000 × 1.00) – 324,000 = 126,000
Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

40. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000
20X5	199,000	324,000
20X6	126,000	450,000

41. **20X6 Construction Period Expenses (1.20.22)**
Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
Construction Period Expenses = 1,260,000 – 126,000 = 1,134,000

42. **20X6 Percent-of-Completion Revenues Journal Entry (1.20.23)**
Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X6	Construction In Process (1.20.1)	126,000	
	Construction Expenses (1.20.2)	1,134,000	
	Construction Revenues (1.20.7)		1,260,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
12/31/X5 199,000 (1.20.23)	
12/31/X6 1,134,000 (1.20.4)	
12/31/X6 126,000 (1.20.23)	
balance 4,500,000	

43. **Percent-of-Completion: Journal Entry Upon Construction Completion (1.20.24)**

		Debit	Credit
12/31/XX	Billings On Construction (1.20.3)	Total Construction Revenues	
	Construction In Process (1.20.1)		Total Construction Revenues

		Debit	Credit
12/31/X6	Billings On Construction (1.20.3)	4,500,000	
	Construction In Process (1.20.1)		4,500,000

1.7 Construction Percent-of-Completion Method: Current Period Loss

Example 7, Current Period Loss using the Percent-of-Completion Method:
Total Construction Revenues = 4,500,000.
Other relevant information:

	20X4	20X5	20X6
Costs to Date	$1,000,000	$2,916,000	–
Remaining Costs Estimate	3,000,000	1,468,962	–

Prepare two years of revenue journal entries using the percent-of-completion method.

Solution 7:

1. **20X4 Prior Costs (1.20.12)**
Let f = The construction project first year.
Let p = The construction project previous year.
Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$

Let f = 20X4.
Let p = 20X3.

Prior Costs = 0

2. **20X4 Costs So Far (1.20.14)**
   Costs So Far = Prior Costs (1.20.12) + Current Period Costs
   Costs So Far = 0 + 1,000,000 = 1,000,000

3. **20X4 Total Costs Estimate (1.20.15)**
   Total Costs Estimate = Costs So Far (1.20.14) + Remaining Costs Estimate
   Total Costs Estimate = 1,000,000 + 3,000,000 = 4,000,000

4. **20X4 Total Gross Profit Estimate (1.20.16)**
   Total Gross Profit Estimate = Total Construction Revenues – Total Costs Estimate (1.20.15)
   Total Gross Profit Estimate = 4,500,000 – 4,000,000 = 500,000

5. **20X4 Percent Complete (1.20.17)**
   $$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$
   $$\text{Percent Complete} = \frac{1{,}000{,}000}{4{,}000{,}000} = 0.25$$

6. **20X4 Construction Period Revenues (1.20.18)**
   Construction Period Revenues = [Total Construction Revenues × Percent Complete (1.20.17)] – Total Prior Revenue Table (1.20.19)
   Construction Period Revenues = (4,500,000 × 0.25) – 0 = 1,125,000
   Add this period's revenue to the Prior Revenue Table (1.20.19).

7. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000

8. **20X4 Period Gross Profit (1.20.20)**
   Since Total Gross Profit Estimate (1.20.16) > 0 then:
   Period Gross Profit = [Total Gross Profit Estimate (1.20.16) × Percent Complete (1.20.17)] – Total Prior Gross Profit (1.20.21)
   Period Gross Profit = (500,000 × 0.25) – 0 = 125,000
   Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

9. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000

10. **20X4 Construction Period Expenses (1.20.22)**
    Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
    Construction Period Expenses = 1,125,000 – 125,000 = 1,000,000

11. **20X4 Percent-of-Completion Revenues Journal Entry (1.20.23)**
    Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X4	Construction In Process (1.20.1)	125,000	
	Construction Expenses (1.20.2)	1,000,000	
	Construction Revenues (1.20.7)		1,125,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
balance 1,125,000	

12. **20X5 Prior Costs (1.20.12)**
Let f = The construction project first year.
Let p = The construction project previous year.

Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
Let f = 20X4.
Let p = 20X4.

Prior Costs = 1,000,000

13. **20X5 Costs So Far (1.20.14)**
Costs So Far = Prior Costs (1.20.12) + Current Period Costs
Costs So Far = 1,000,000 + (2,916,000 – 1,000,000) = 2,916,000

14. **20X5 Total Costs Estimate (1.20.15)**
Total Costs Estimate = Costs So Far (1.20.14) +
Remaining Costs Estimate
Total Costs Estimate = 2,916,000 + 1,468,962 = 4,384,962

15. **20X5 Total Gross Profit Estimate (1.20.16)**
Total Gross Profit Estimate = Total Construction Revenues –
Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,384,962 = 115,038

16. **20X5 Percent Complete (1.20.17)**
$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$
$$\text{Percent Complete} = \frac{2{,}916{,}000}{4{,}384{,}962} = 0.665$$

17. **20X5 Construction Period Revenues (1.20.18)**
Construction Period Revenues = [Total Construction Revenues ×
Percent Complete (1.20.17)] –
Total Prior Revenue Table (1.20.19)
Construction Period Revenues = [4,500,000 × 0.665] – 1,125,000 = 1,867,500
Add this period's revenue to the Prior Revenue Table (1.20.19).

18. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000
20X5	1,867,500	2,992,500

19. **20X5 Period Gross Profit (1.20.20)**
Since Total Gross Profit Estimate (1.20.16) > 0 then:
Period Gross Profit = [Total Gross Profit Estimate (1.20.16) ×
Percent Complete (1.20.17)] –
Total Prior Gross Profit (1.20.21)
Period Gross Profit = (115,038 × 0.665) – 125,000 = -48,500
Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

20. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000
20X5	-48,500	76,500

21. **20X5 Construction Period Expenses (1.20.22)**
Construction Period Expenses = Construction Period Revenues (1.20.18) –
Period Gross Profit (1.20.20)
Construction Period Expenses = 1,867,500 – -48,500 = 1,916,000

22. **20X5 Percent-of-Completion Revenues Journal Entry (1.20.23)**
Since Period Gross Profit (1.20.20) < 0 then:

		Debit	Credit
12/31/XX	Construction Expenses (1.20.2)	(1.20.22)	
	Construction In Process (1.20.1)		(1.20.20)
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X5	Construction Expenses (1.20.2)	1,916,000	
	Construction In Process (1.20.1)		48,500
	Construction Revenues (1.20.7)		1,867,500

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
	12/31/X5 48,500 (1.20.23)
balance 2,992,500	

1.8 Construction Percent-of-Completion Method: Unprofitable Contract

Example 8, Unprofitable contract using the Percent-of-Completion Method:
Total Construction Revenues = 4,500,000.
Other relevant information:

	20X4	20X5	20X6
Costs to Date	$1,000,000	$2,916,000	–
Remaining Costs Estimate	3,000,000	1,640,250	–

Prepare two years of revenue journal entries using the percent-of-completion method.

Solution 8:

1. **20X4 Prior Costs (1.20.12)**
Let f = The construction project first year.
Let p = The construction project previous year.

Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
Let f = 20X4.
Let p = 20X3.

Prior Costs = 0

2. **20X4 Costs So Far (1.20.14)**
Costs So Far = Prior Costs (1.20.12) + Current Period Costs
Costs So Far = 0 + 1,000,000 = 1,000,000

3. **20X4 Total Costs Estimate (1.20.15)**
Total Costs Estimate = Costs So Far (1.20.14) + Remaining Costs Estimate
Total Costs Estimate = 1,000,000 + 3,000,000 = 4,000,000

4. **20X4 Total Gross Profit Estimate (1.20.16)**
Total Gross Profit Estimate = Total Construction Revenues – Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,000,000 = 500,000

5. **20X4 Percent Complete (1.20.17)**
$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$
$$\text{Percent Complete} = \frac{1{,}000{,}000}{4{,}000{,}000} = 0.25$$

6. **20X4 Construction Period Revenues (1.20.18)**
   Construction Period Revenues = [Total Construction Revenues × Percent Complete (1.20.17)] – Total Prior Revenue Table (1.20.19)
   Construction Period Revenues = (4,500,000 × 0.25) – 0 = 1,125,000
   Add this period's revenue to the Prior Revenue Table (1.20.19).

7. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000

8. **20X4 Period Gross Profit (1.20.20)**
   Since Total Gross Profit Estimate (1.20.16) > 0 then:
   Period Gross Profit = [Total Gross Profit Estimate (1.20.16) × Percent Complete (1.20.17)] – Total Prior Gross Profit (1.20.21)
   Period Gross Profit = (500,000 × 0.25) – 0 = 125,000
   Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

9. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000

10. **20X4 Construction Period Expenses (1.20.22)**
    Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
    Construction Period Expenses = 1,125,000 – 125,000 = 1,000,000

11. **20X4 Percent-of-Completion Revenues Journal Entry (1.20.23)**
    Since Period Gross Profit (1.20.20) > 0 then:

		Debit	Credit
12/31/XX	Construction In Process (1.20.1)	(1.20.20)	
	Construction Expenses (1.20.2)	(1.20.22)	
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X4	Construction In Process (1.20.1)	125,000	
	Construction Expenses (1.20.2)	1,000,000	
	Construction Revenues (1.20.7)		1,125,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
balance 1,125,000	

12. **20X5 Prior Costs (1.20.12)**
    Let f = The construction project first year.
    Let p = The construction project previous year.
    Prior Costs = $\sum_{i=f}^{p}$ Period Cost$_i$
    Let f = 20X4.
    Let p = 20X4.
    Prior Costs = 1,000,000

13. **20X5 Costs So Far (1.20.14)**
    Costs So Far = Prior Costs (1.20.12) + Current Period Costs
    Costs So Far = 1,000,000 + (2,916,000 – 1,000,000) = 2,916,000

14. **20X5 Total Costs Estimate (1.20.15)**
    Total Costs Estimate = Costs So Far (1.20.14) + Remaining Costs Estimate
    Total Costs Estimate = 2,916,000 + 1,640,250 = 4,556,250

15. **20X5 Total Gross Profit Estimate (1.20.16)**
Total Gross Profit Estimate = Total Construction Revenues – Total Costs Estimate (1.20.15)
Total Gross Profit Estimate = 4,500,000 – 4,556,250 = -56,250

16. **20X5 Percent Complete (1.20.17)**
$$\text{Percent Complete} = \frac{\text{Costs So Far (1.20.14)}}{\text{Total Costs Estimate (1.20.15)}}$$
$$\text{Percent Complete} = \frac{2{,}916{,}000}{4{,}556{,}250} = 0.64$$

17. **20X5 Construction Period Revenues (1.20.18)**
Construction Period Revenues = [Total Construction Revenues × Percent Complete (1.20.17)] – Total Prior Revenue Table (1.20.19)
Construction Period Revenues = [4,500,000 × 0.64] – 1,125,000 = 1,755,000
Add this period's revenue to the Prior Revenue Table (1.20.19).

18. **Prior Revenue Table (1.20.19)**

Year	Revenues	Total
20X4	1,125,000	1,125,000
20X5	1,755,000	2,880,000

19. **20X5 Period Gross Profit (1.20.20)**
Since Total Gross Profit Estimate (1.20.16) < 0 then:
Period Gross Profit = Total Gross Profit Estimate (1.20.16) – Total Prior Gross Profit (1.20.21)
Period Gross Profit = -56,250 – 125,000 = -181,250
Add this period's gross profit to the Prior Gross Profit Table (1.20.21).

20. **Prior Gross Profit Table (1.20.21)**

Year	Gross Profit	Total
20X4	125,000	125,000
20X5	-181,250	-56,250

21. **20X5 Construction Period Expenses (1.20.22)**
Construction Period Expenses = Construction Period Revenues (1.20.18) – Period Gross Profit (1.20.20)
Construction Period Expenses = 1,755,000 – -181,250 = 1,936,250

22. **20X5 Percent-of-Completion Revenues Journal Entry (1.20.23)**
Since Period Gross Profit (1.20.20) < 0 then:

		Debit	Credit
12/31/XX	Construction Expenses (1.20.2)	(1.20.22)	
	Construction In Process (1.20.1)		(1.20.20)
	Construction Revenues (1.20.7)		(1.20.18)

		Debit	Credit
12/31/X5	Construction Expenses (1.20.2)	1,936,250	
	Construction In Process (1.20.1)		181,250
	Construction Revenues (1.20.7)		1,755,000

Ledger

Construction In Process

12/31/X4 1,000,000 (1.20.4)	
12/31/X4 125,000 (1.20.23)	
12/31/X5 1,916,000 (1.20.4)	
	12/31/X5 181,250 (1.20.23)
balance 2,859,750	

1.9 Installment Sales Method: Simple

Example 9, Installment Sales Method
Relevant information:

	20X0
Installment Sales	$100,000
Cost of Installment Sales	50,000
Cash receipts on 20X0 sales	60,000

What amount of Net Accounts Receivable is reported?

Solution 9:

1. **20X0 Installment Sales (1.21.2)**

		Debit	Credit
XX/XX/XX	Installment Accounts Receivable (1.21.1)	Amount	
	Installment Sales		Amount

		Debit	Credit
12/31/X0	Installment Accounts Receivable (1.21.1)	100,000	
	Installment Sales		100,000

2. **20X0 Cost of Installment Sales (1.21.3)**
Journal Entry for Cost of Goods Sold

		Debit	Credit
XX/XX/XX	Cost of Installment Sales	Book Value of Items Sold	
	Inventory		Book Value of Items Sold

		Debit	Credit
12/31/X0	Cost of Installment Sales	50,000	
	Inventory		50,000

3. **20X0 Cash Collection (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X0	Cash (1.1.9)	60,000	
	Installment Accounts Receivable (1.21.1)		60,000

Add this cash collection to the Cash Collection Table (1.21.5).

4. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X0	60,000

5. **20X0 Installment Gross Profit (1.21.6)**
Installment Gross Profit = Installment Sales (1.21.2) Balance – Cost of Installment Sales (1.21.3) Balance
20X0 Installment Gross Profit = 100,000 – 50,000 = 50,000
Closing Journal Entry

		Debit	Credit
12/31/XX	Installment Sales (1.21.2)	(1.21.2) Balance	
	Cost of Installment Sales (1.21.3)		(1.21.3) Balance
	Deferred Gross Profit (1.1.19)		(1.21.6)

		Debit	Credit
12/31/X0	Installment Sales (1.21.2)	100,000	
	Cost of Installment Sales (1.21.3)		50,000
	Deferred Gross Profit (1.1.19)		50,000

6. **Gross Profit Margin Percentage for Year 20X0 (1.21.7)**

$$\text{Installment Gross Profit Margin Percentage} = \frac{\text{Gross Profit (1.21.6)}}{\text{Installment Sales (1.21.2)}}$$

$$\text{20X0 Installment Gross Profit Margin Percentage} = \frac{50{,}000}{100{,}000} = 0.50$$

Add this year's Gross Profit Margin Percentage to the Gross Profit Margin Percentage Table (1.21.8).

7. **20X0 Gross Profit Margin Percentage Table (1.21.8)**

Year	Gross Profit Margin Percentage
20X0	0.50

8. **20X0 Realized Each Year's Gross Profit (1.21.9)**

For each year y such that cash was collected this year for a sale made in year y:

Realized Gross Profit Amount = Cash Collection for Sale Made In Year y (1.21.5) × Gross Profit Margin Percentage for Year y (1.21.8)

Journal Entry

		Debit	Credit
12/31/XX	Deferred Gross Profit (1.1.19)	(1.21.9)	
	Realized Gross Profit (1.1.21)		(1.21.9)

20X0 Realized Gross Profit Amount = Cash Collection for Year 20X0 (1.21.5) × Gross Profit Margin Percentage for Year 20X0 (1.21.8)

20X0 Realized Gross Profit Amount = 60,000 × 0.50 = 30,000

Journal Entry

		Debit	Credit
12/31/X0	Deferred Gross Profit (1.1.19)	30,000	
	Realized Gross Profit (1.1.21)		30,000

9. **Net Accounts Receivable (1.1.20)**

Net Accounts Receivable = Installment Accounts Receivable (1.21.1) Debit Balance – Deferred Gross Profit (1.1.19) Credit Balance

20X0 Net Accounts Receivable = (100,000 – 60,000) – (50,000 – 30,000) = $20,000

1.10 Installment Sales Method: Tricky

Example 10, Installment Sales Method

When the collectibility of a business customer's receivable becomes uncertain, the selling firm switches to the installment method of revenue recognition by closing the sales and cost of goods sold accounts, and establishing a deferred gross profit account. All such switches are made in the year of sale for this particular seller. The seller reported the following in its latest annual report. Although the seller sells different types of products, the gross margin percentage is relatively uniform across those products.

Latest Income Statement

	Sales Revenue	$400,000
(less)	Cost of Goods Sold (1.1.14)	(250,000)
	Gross Profit on Sales	150,000
(add)	Realized Gross Profit	20,000
	Gross Profit (1.1.16)	170,000

How much cash was collected on installment method receivables during the year?

Solution 10:

1. **Installment Gross Profit Margin Percentage (1.21.7)**

$$\text{Installment Gross Profit Margin Percentage} = \frac{\text{Installment Gross Profit (1.21.6)}}{\text{Installment Sales (1.21.2)}}$$

$$\text{Installment Gross Profit Margin Percentage} = \frac{150{,}000}{400{,}000} = 0.375$$

2. **Realized Each Year's Gross Profit (1.21.9)**

For each year y such that cash was collected this year for a sale made in year y:

Realized Gross Profit Amount = Cash Collection for Sale Made In Year y (1.21.5) × Installment Gross Profit Margin Percentage for Year y (1.21.8)

$$\text{Cash Collected for Sale Made} = \frac{\text{Realized Gross Profit}}{\text{Installment Sales Gross Profit Percentage (1.21.7)}}$$

$$\text{Cash Collected for Sale Made} = \frac{20{,}000}{0.375} = 53{,}333$$

1.11 Installment Sales Method: Comprehensive

Example 11, Installment Sales Method

Relevant information:

	20X4	20X5	20X6
Installment Sales	$200,000	$250,000	$240,000
Cost of Installment Sales	150,000	190,000	168,000
Cash receipts on 20X4 sales	60,000	100,000	40,000
Cash receipts on 20X5 sales		100,000	125,000
Cash receipts on 20X6 sales			80,000

Prepare all the installment sales journal entries for three years.

Solution 11:

1. **20X4 Installment Sales (1.21.2)**

		Debit	Credit
XX/XX/XX	Installment Accounts Receivable (1.21.1)	Amount	
	Installment Sales		Amount

		Debit	Credit
12/31/X4	Installment Accounts Receivable (1.21.1)	200,000	
	Installment Sales		200,000

2. **20X4 Cost of Installment Sales (1.21.3)**
   Journal Entry for Cost of Goods Sold

		Debit	Credit
XX/XX/XX	Cost of Installment Sales	Book Value of Items Sold	
	Inventory		Book Value of Items Sold

		Debit	Credit
12/31/X4	Cost of Installment Sales	150,000	
	Inventory		150,000

3. **20X4 Cash Collection (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X4	Cash (1.1.9)	60,000	
	Installment Accounts Receivable (1.21.1)		60,000

   Add this cash collection to the Cash Collection Table (1.21.5).

4. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	60,000

5. **20X4 Installment Gross Profit (1.21.6)**
   Installment Gross Profit = Installment Sales (1.21.2) Balance – Cost of Installment Sales (1.21.3) Balance
   20X4 Installment Gross Profit = 200,000 – 150,000 = 50,000
   Closing Journal Entry

		Debit	Credit
12/31/XX	Installment Sales (1.21.2)	(1.21.2) Balance	
	Cost of Installment Sales (1.21.3)		(1.21.3) Balance
	Deferred Gross Profit (1.1.19)		(1.21.6)

		Debit	Credit
12/31/X4	Installment Sales (1.21.2)	200,000	
	Cost of Installment Sales (1.21.3)		150,000
	Deferred Gross Profit (1.1.19)		50,000

6. **Gross Profit Margin Percentage for Year 20X4 (1.21.7)**

$$\text{Installment Gross Profit Margin Percentage} = \frac{\text{Gross Profit (1.21.6)}}{\text{Installment Sales (1.21.2)}}$$

$$\text{20X4 Installment Gross Profit Margin Percentage} = \frac{50{,}000}{200{,}000} = 0.25$$

Add this year's Gross Profit Margin Percentage to the Gross Profit Margin Percentage Table (1.21.8).

7. **20X4 Gross Profit Margin Percentage Table (1.21.8)**

Year	Gross Profit Margin Percentage
20X4	0.25

8. **20X4 Realized Each Year's Gross Profit (1.21.9)**

For each year y such that cash was collected this year for a sale made in year y:

Realized Gross Profit Amount = Cash Collection for Sale Made In Year y (1.21.5) × Gross Profit Margin Percentage for Year y (1.21.8)

Journal Entry

		Debit	Credit
12/31/XX	Deferred Gross Profit (1.1.19)	(1.21.9)	
	Realized Gross Profit (1.1.21)		(1.21.9)

20X4 Realized Gross Profit Amount = Cash Collection for Year 20X4 (1.21.5) × Gross Profit Margin Percentage for Year 20X4 (1.21.8)

20X4 Realized Gross Profit Amount = 60,000 × 0.25 = 15,000

Journal Entry

		Debit	Credit
12/31/X4	Deferred Gross Profit (1.1.19)	15,000	
	Realized Gross Profit (1.1.21)		15,000

9. **20X4 Realized Gross Profit (1.1.21) = $15,000**

10. **20X4 Installment Sales Closing Entry (1.21.10)**

		Debit	Credit
12/31/XX	Realized Gross Profit (1.1.21)	(1.1.21) Balance	
	Income Summary		(1.1.21) Balance

		Debit	Credit
12/31/X4	Realized Gross Profit (1.1.21)	15,000	
	Income Summary		15,000

11. **20X4 Closing Cash Collection Table (1.21.11)**

Year	Running Total Cash Collection

12. **20X5 Installment Sales (1.21.2)**

		Debit	Credit
XX/XX/XX	Installment Accounts Receivable (1.21.1)	Amount	
	Installment Sales		Amount

		Debit	Credit
12/31/X5	Installment Accounts Receivable (1.21.1)	250,000	
	Installment Sales		250,000

13. **20X5 Cost of Installment Sales (1.21.3)**

Journal Entry for Cost of Goods Sold

		Debit	Credit
XX/XX/XX	Cost of Installment Sales	Book Value of Items Sold	
	Inventory		Book Value of Items Sold

		Debit	Credit
12/31/X5	Cost of Installment Sales	190,000	
	Inventory		190,000

14. **20X5 Cash Collection for Year 20X4 (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X5	Cash (1.1.9)	100,000	
	Installment Accounts Receivable (1.21.1)		100,000

Add this cash collection to the Cash Collection Table (1.21.5).

15. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	100,000

16. **20X5 Cash Collection for Year 20X5 (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X5	Cash (1.1.9)	100,000	
	Installment Accounts Receivable (1.21.1)		100,000

Add this cash collection to the Cash Collection Table (1.21.5).

17. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	100,000
20X5	100,000

18. **Gross Profit for Year 20X5 (1.21.6)**

Installment Gross Profit = Installment Sales (1.21.2) Balance – Cost of Installment Sales (1.21.3) Balance

Installment Gross Profit = 250,000 – 190,000 = 60,000

Closing Journal Entry

		Debit	Credit
12/31/XX	Installment Sales (1.21.2)	(1.21.2) Balance	
	Cost of Installment Sales (1.21.3)		(1.21.3) Balance
	Deferred Gross Profit (1.1.19)		(1.21.6)

		Debit	Credit
12/31/X5	Installment Sales (1.21.2)	250,000	
	Cost of Installment Sales (1.21.3)		190,000
	Deferred Gross Profit (1.1.19)		60,000

19. **Gross Profit Margin Percentage for Year 20X5 (1.21.7)**

$$\text{Installment Gross Profit Margin Percentage} = \frac{\text{Gross Profit (1.21.6)}}{\text{Installment Sales (1.21.2)}}$$

$$\text{Installment Gross Profit Margin Percentage for Year 20X5} = \frac{60{,}000}{250{,}000} = 0.24$$

Add this year's Gross Profit Margin Percentage to the Gross Profit Margin Percentage Table (1.21.8).

20. **20X5 Gross Profit Margin Percentage Table (1.21.8)**

Year	Gross Profit Margin Percentage
20X4	0.25
20X5	0.24

21. **20X5 Realized Each Year's Gross Profit (1.21.9)**

For each year y such that cash was collected this year for a sale made in year y:

Realized Gross Profit Amount = Cash Collection for Sale Made In Year y (1.21.5) × Gross Profit Margin Percentage for Year y (1.21.8)

Journal Entry

		Debit	Credit
12/31/XX	Deferred Gross Profit (1.1.19)	(1.21.9)	
	Realized Gross Profit (1.1.21)		(1.21.9)

Realized Gross Profit Amount = Cash Collection for Year 20X4 (1.21.5) × Gross Profit Margin Percentage for Year 20X4 (1.21.8)

20X4 Realized Gross Profit Amount = 100,000 × 0.25 = 25,000

Journal Entry

		Debit	Credit
12/31/X5	Deferred Gross Profit (1.1.19)	25,000	
	Realized Gross Profit (1.1.21)		25,000

20X5 Realized Gross Profit Amount = Cash Collection for Year 20X5 (1.21.5) × Gross Profit Margin Percentage for Year 20X5 (1.21.8)

20X5 Realized Gross Profit Amount = 100,000 × 0.24 = 24,000

Journal Entry

		Debit	Credit
12/31/X5	Deferred Gross Profit (1.1.19)	24,000	
	Realized Gross Profit (1.1.21)		24,000

22. **20X5 Realized Gross Profit (1.1.21) = $49,000**

23. **20X5 Installment Sales Closing Entry (1.21.10)**

		Debit	Credit
12/31/XX	Realized Gross Profit (1.1.21)	(1.1.21) Balance	
	Income Summary		(1.1.21) Balance

		Debit	Credit
12/31/X5	Realized Gross Profit (1.1.21)	49,000	
	Income Summary		49,000

24. **20X5 Closing Cash Collection Table (1.21.11)**

Year	Running Total Cash Collection

25. **20X6 Installment Sales (1.21.2)**

		Debit	Credit
XX/XX/XX	Installment Accounts Receivable (1.21.1)	Amount	
	Installment Sales		Amount

		Debit	Credit
12/31/X6	Installment Accounts Receivable (1.21.1)	240,000	
	Installment Sales		240,000

26. **20X6 Cost of Installment Sales (1.21.3)**

Journal Entry for Cost of Goods Sold

		Debit	Credit
XX/XX/XX	Cost of Installment Sales	Book Value of Items Sold	
	Inventory		Book Value of Items Sold

		Debit	Credit
12/31/X6	Cost of Installment Sales	168,000	
	Inventory		168,000

27. **20X6 Cash Collection for Year 20X4 (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X6	Cash (1.1.9)	40,000	
	Installment Accounts Receivable (1.21.1)		40,000

Add this cash collection to the Cash Collection Table (1.21.5).

28. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	40,000

29. **20X6 Cash Collection for Year 20X5 (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X6	Cash (1.1.9)	125,000	
	Installment Accounts Receivable (1.21.1)		125,000

Add this cash collection to the Cash Collection Table (1.21.5).

30. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	40,000
20X5	125,000

31. **20X6 Cash Collection for Year 20X6 (1.21.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Amount	
	Installment Accounts Receivable (1.21.1)		Amount

		Debit	Credit
12/31/X6	Cash (1.1.9)	80,000	
	Installment Accounts Receivable (1.21.1)		80,000

Add this cash collection to the Cash Collection Table (1.21.5).

32. **Cash Collection Table (1.21.5)**

Year	Running Total Cash Collection
20X4	40,000
20X5	125,000
20X6	80,000

33. **Gross Profit for Year 20X6 (1.21.6)**

Installment Gross Profit = Installment Sales (1.21.2) Balance – Cost of Installment Sales (1.21.3) Balance

Installment Gross Profit = 240,000 – 168,000 = 72,000

Closing Journal Entry

		Debit	Credit
12/31/XX	Installment Sales (1.21.2)	(1.21.2) Balance	
	Cost of Installment Sales (1.21.3)		(1.21.3) Balance
	Deferred Gross Profit (1.1.19)		(1.21.6)

		Debit	Credit
12/31/X6	Installment Sales (1.21.2)	240,000	
	Cost of Installment Sales (1.21.3)		168,000
	Deferred Gross Profit (1.1.19)		72,000

34. **Gross Profit Margin Percentage for Year 20X6 (1.21.7)**

$$\text{Installment Gross Profit Margin Percentage} = \frac{\text{Gross Profit (1.21.6)}}{\text{Installment Sales (1.21.2)}}$$

$$\text{Installment Gross Profit Margin Percentage} = \frac{72{,}000}{240{,}000} = 0.30$$

Add this year's Gross Profit Margin Percentage to the Gross Profit Margin Percentage Table (1.21.8).

35. **20X6 Gross Profit Margin Percentage Table (1.21.8)**

Year	Gross Profit Margin Percentage
20X4	0.25
20X5	0.24
20X6	0.30

36. **20X6 Realized Each Year's Gross Profit (1.21.9)**

For each year y such that cash was collected this year for a sale made in year y:

Realized Gross Profit Amount = Cash Collection for Sale Made In Year y (1.21.5) × Gross Profit Margin Percentage for Year y (1.21.8)

Journal Entry

		Debit	Credit
12/31/XX	Deferred Gross Profit (1.1.19)	(1.21.9)	
	Realized Gross Profit (1.1.21)		(1.21.9)

20X4 Realized Gross Profit Amount = Cash Collection for Year 20X4 (1.21.5) × Gross Profit Margin Percentage for Year 20X4 (1.21.8)

20X4 Realized Gross Profit Amount = 40,000 × 0.25 = 10,000

Journal Entry

		Debit	Credit
12/31/X6	Deferred Gross Profit (1.1.19)	10,000	
	Realized Gross Profit (1.1.21)		10,000

20X5 Realized Gross Profit Amount = Cash Collection for Year 20X5 (1.21.5) × Gross Profit Margin Percentage for Year 20X5 (1.21.8)

20X5 Realized Gross Profit Amount = 125,000 × 0.24 = 30,000

Journal Entry

		Debit	Credit
12/31/X6	Deferred Gross Profit (1.1.19)	30,000	
	Realized Gross Profit (1.1.21)		30,000

20X6 Realized Gross Profit Amount = Cash Collection for Year 20X6 (1.21.5) × Gross Profit Margin Percentage for Year 20X6 (1.21.8)

20X6 Realized Gross Profit Amount = 80,000 × 0.30 = 24,000

Journal Entry

		Debit	Credit
12/31/X6	Deferred Gross Profit (1.1.19)	24,000	
	Realized Gross Profit (1.1.21)		24,000

37. **20X6 Realized Gross Profit (1.1.21) = $64,000**

38. **20X6 Installment Sales Closing Entry (1.21.10)**

		Debit	Credit
12/31/XX	Realized Gross Profit (1.1.21)	(1.1.21) Balance	
	Income Summary		(1.1.21) Balance

		Debit	Credit
12/31/X6	Realized Gross Profit (1.1.21)	64,000	
	Income Summary		64,000

39. **20X6 Closing Cash Collection Table (1.21.11)**

Year	Running Total Cash Collection

1.12 Cost Recovery Method

Example 12, Cost Recovery Method
Sales Price 1/1/X4 = 36,000.
Cost 1/1/X4 = 25,000.
Cash Collection 1/1/X4 = 18,000.
Cash Collection 1/1/X5 = 12,000.
Cash Collection 1/1/X6 = 6,000.

Prepare all the cost recovery method journal entries for three years.

Solution 12:

1. **Gross Profit Amount (1.23.1)**
   Gross Profit Amount = Sales Price – Cost
   Gross Profit Amount = 36,000 – 25,000 = 11,000

2. **Cost Recovery Sales Transaction (1.23.2)**

		Debit	Credit
XX/XX/XX	Accounts Receivable (1.1.11)	Sales Price	
	Inventory		Cost
	Deferred Gross Profit (1.1.19)		Gross Profit Amount (1.23.1)

		Debit	Credit
01/01/X4	Accounts Receivable (1.1.11)	36,000	
	Inventory		25,000
	Deferred Gross Profit (1.1.19)		11,000

Add this transaction to the Cost Recovery Table (1.23.3) with the Cost entered in the Unrecovered Cost column.

3. **Cost Recovery Table (1.23.3)**

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
XX/XX/XX	0	Cost	0

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
01/01/X4	0	25,000	0

4. **Cost Recovery Cash Receipt (1.23.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
01/01/X4	Cash (1.1.9)	18,000	
	Accounts Receivable (1.1.11)		18,000

5. **Cost Recovery Cash Receipt: Cost Recovery Table (1.23.5)**
Since Cash Received < Unrecovered Cost then:

   (a) New Unrecovered Cost = Unrecovered Cost – Cash Received

   (b) New Realized Gross Profit = 0

   (a) New Unrecovered Cost = 25,000 – 18,000 = 7,000

   (b) New Realized Gross Profit = 0

   Cost Recovery Table

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
XX/XX/XX	0	Cost	0
XX/XX/XX	Cash Received	New Unrecovered Cost	New Realized Gross Profit

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
01/01/X4	0	25,000	0
01/01/X4	18,000	7,000	0

6. **Cost Recovery Cash Receipt (1.23.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
01/01/X5	Cash (1.1.9)	12,000	
	Accounts Receivable (1.1.11)		12,000

7. **Cost Recovery Cash Receipt: Cost Recovery Table (1.23.5)**
Since Cash Received >= Unrecovered Cost then:

   (a) New Unrecovered Cost = 0

   (b) New Realized Gross Profit = Cash Received – Unrecovered Cost

   (a) New Unrecovered Cost = 0

   (b) New Realized Gross Profit = 12,000 – 7,000 = 5,000

   Cost Recovery Table

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
XX/XX/XX	0	Cost	0
XX/XX/XX	Cash Received	New Unrecovered Cost	New Realized Gross Profit

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
01/01/X4	0	25,000	0
01/01/X4	18,000	7,000	0
01/01/X5	12,000	0	5,000

8. **Cost Recovery Cash Receipt: Realize Gross Profit Journal Entry (1.23.6)**
Since New Realized Gross Profit > 0 then:

		Debit	Credit
XX/XX/XX	Deferred Gross Profit (1.1.19)	New Realized Gross Profit	
	Realized Gross Profit (1.1.21)		New Realized Gross Profit

		Debit	Credit
01/01/X5	Deferred Gross Profit (1.1.19)	5,000	
	Realized Gross Profit (1.1.21)		5,000

9. **Cost Recovery Closing Entry (1.23.7)**
After printing the financial statements, then:

		Debit	Credit
12/31/XX	Realized Gross Profit (1.1.21)	(1.1.21) Balance	
	Income Summary		(1.1.21) Balance

		Debit	Credit
12/31/X5	Realized Gross Profit (1.1.21)	5,000	
	Income Summary		5,000

10. **Cost Recovery Cash Receipt (1.23.4)**

		Debit	Credit
XX/XX/XX	Cash (1.1.9)	Cash Received	
	Accounts Receivable (1.1.11)		Cash Received

		Debit	Credit
01/01/X6	Cash (1.1.9)	6,000	
	Accounts Receivable (1.1.11)		6,000

11. **Cost Recovery Cash Receipt: Cost Recovery Table (1.23.5)**
Since Cash Received >= Unrecovered Cost then:

(a) New Unrecovered Cost = 0

(b) New Realized Gross Profit = Cash Received – Unrecovered Cost

(a) New Unrecovered Cost = 0

(b) New Realized Gross Profit = 6,000 – 0 = 6,000

Cost Recovery Table

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
XX/XX/XX	0	Cost	0
XX/XX/XX	Cash Received	New Unrecovered Cost	New Realized Gross Profit

Date	Cash Received	Unrecovered Cost	Realized Gross Profit
01/01/X4	0	25,000	0
01/01/X4	18,000	7,000	0
01/01/X5	12,000	0	5,000
01/01/X6	6,000	0	6,000

12. **Cost Recovery Cash Receipt: Realize Gross Profit Journal Entry (1.23.6)**
Since New Realized Gross Profit > 0 then:

		Debit	Credit
XX/XX/XX	Deferred Gross Profit (1.1.19)	New Realized Gross Profit	
	Realized Gross Profit (1.1.21)		New Realized Gross Profit

		Debit	Credit
01/01/X6	Deferred Gross Profit (1.1.19)	6,000	
	Realized Gross Profit (1.1.21)		6,000

13. **Cost Recovery Closing Entry (1.23.7)**
After printing the financial statements, then:

		Debit	Credit
12/31/XX	Realized Gross Profit (1.1.21)	(1.1.21) Balance	
	Income Summary		(1.1.21) Balance

		Debit	Credit
12/31/X6	Realized Gross Profit (1.1.21)	6,000	
	Income Summary		6,000

Chapter 2

Inventory Examples

2.1 Basic Inventory Identity: Simple

Example 13: Basic Inventory Identity
Data for a firm's inventory system for the current year follows:
Beginning inventory = \$600
Purchases = \$8,000
Ending inventory = \$900
Purchases returns and allowances = \$600
Transportation-in = \$500
Transportation-out = \$700
Interest expensed on debt incurred to acquire inventory = \$1,000
What is the cost of goods sold?
Solution 13:

1. **Basic Inventory Identity for Merchandising (2.1)**

Goods Available for Sale =	+	Beginning Inventory	600
	+	Purchases	8,000
	+	Freight-in	500
	–	Purchase Returns and Allowances for Defects	600
	–	Slippage	0
Goods Available for Sale =			8,500
Cost of Goods Sold =	+	Goods Available for Sale	8,500
	–	Ending Inventory	900
Cost of Goods Sold =			7,600

2.2 LIFO Periodic

Example 14: LIFO Periodic Tricky
A LIFO firm purchased 1,000 units during the current year but sold 1,100 units. The beginning inventory at 1/1/X3 had two layers: (1) most recent layer: 50 units @ \$2 each, (2) earlier layer: 230 units @ \$1.50 each. The tax rate is 30%. The replacement cost of inventory at year-end was \$4 per unit. Compute the tax increase caused by the LIFO liquidation.

Solution 14:

1. **Periodic LIFO Purchases Journal Table (2.3.2): Beginning of Year**

Purchases Journal$_{item}$			
Date	Quantity Purchased	\$Cost Per Item	Quantity Remaining
1/1/X1	???	1.50	230
1/1/X2	???	2.00	50

2. **Beginning Inventory Value$_{item}$**
Let n = the number of layers.
Beginning Inventory Value = $\sum_{i=1}^{n}$ Cost Per Item$_i$ × Quantity Remaining$_i$
Beginning Inventory Value = $(1.50 \times 230) + (2.00 \times 50) = 445$

3. **Periodic LIFO Purchases Journal Table (2.3.2): After Current-Year Purchase**

Purchases Journal$_{item}$			
Date	Quantity Purchased	$Cost Per Item	Quantity Remaining
1/1/X1	???	1.50	230
1/1/X2	???	2.00	50
1/1/X3	1,000	4.00	1,000

4. **Quantity Available For Sale$_{item}$ (2.3.3)**
   Let n = the number of layers.
   Quantity Available For Sale = $\sum_{i=1}^{n}$ Quantity Remaining$_i$
   Quantity Available For Sale = 230 + 50 + 1,000 = 1,280

5. **Ending Inventory Quantity$_{item}$ (2.3.1)**
   At year end, take a physical inventory count of this inventory item.
   Ending Inventory Quantity = 230 + 50 + 1,000 – 1,100 = 180 (← computed)

6. **Quantity Sold$_{item}$ (2.3.4)**
   Quantity Sold = Quantity Available For Sale (2.3.3) –
   Ending Inventory Quantity (2.3.1)
   Quantity Sold = 1,100 (← given)

7. **Quantity Remaining Reduction Algorithm (2.3.5)**
   1 Total Quantity Remaining = Quantity Sold (2.3.4)
   2 For L in each layer from bottom to top:
   If Quantity Remaining$_L$ = 0 then:
   Do nothing
   If Quantity Remaining$_L$ < Total Quantity Remaining then:
   Total Quantity Remaining = Total Quantity Remaining – Quantity Remaining$_L$
   Quantity Remaining$_L$ = 0
   If Quantity Remaining$_L$ >= Total Quantity Remaining then:
   Quantity Remaining$_L$ = Quantity Remaining$_L$ – Total Quantity Remaining
   Goto Ending Inventory Value (2.3.6)

   Periodic LIFO Purchases Journal Table (2.3.2)

Purchases Journal$_{item}$			
Date	Quantity Purchased	$Cost Per Item	Quantity Remaining
12/31/X1	???	1.50	~~230~~ 180
12/31/X2	???	2.00	~~50~~ 0
12/31/X3	1,000	4.00	~~1,000~~ 0

8. **Ending Inventory Value$_{item}$ (2.3.6): With Liquidation**
   Let n = the number of layers.
   Ending Inventory Value = $\sum_{i=1}^{n}$ Cost Per Item$_i$ × Quantity Remaining$_i$
   Ending Inventory Value = (1.50 × 180) + (2.00 × 0) + (4.00 × 0) = 270

9. **Basic Inventory Identity for Merchandising (2.1): With Liquidation**

Goods Available for Sale =	+ Beginning Inventory	445
	+ Purchases	4,000
	+ Freight-in	0
	– Purchase Returns and Allowances for Defects	0
	– Slippage	0
Goods Available for Sale =		4,445
Cost of Goods Sold =	+ Goods Available for Sale	4,445
	– Ending Inventory	270
Cost of Goods Sold =		**4,175**

10. **Cost of Goods Sold: Without Liquidation**
    Cost of Goods Sold = 1,100 × 4.00 = 4,400

11. **Tax Increase**
    Tax Increase = [Cost of Goods Sold: Without Liquidation –
    Cost of Goods Sold: With Liquidation] ×
    Tax Rate
    Tax Increase = [4,400 – 4,175] × 0.30 = 67.50

2.3 Dollar Value LIFO: Simple

Example 15: Dollar Value LIFO
A firm adopted LIFO for external reporting at the beginning of 20X1. There was one layer of inventory at that time costing $2,000. The price level was set at 1.00 for that layer. The firm uses FIFO for internal purposes. Ending inventory for the current year under FIFO is $3,300 and the price level index for that inventory is 1.10. The firm purchased a total of $23,000 of inventory during the year. Using DV LIFO, what is cost of goods sold for 20X1.

Solution 15:

1. **Dollar Value LIFO Alogrithm (2.8.4): 20X1**

1 $\text{Year}_{CurrentYear}$ = The current year

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1						

2 $\text{\$Current}_{CurrentYear}$ = Ending Inventory at Current Costs (2.8.1)

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1	3,300					

4 Since CurrentYear > Base Year then:

$$\text{Index}_{CurrentYear} = \text{Index}_{CurrentYear-1} + \text{Inflation Rate}$$
$$\text{\$Base}_{CurrentYear} = \text{\$Current}_{CurrentYear} \div \text{Index}_{CurrentYear}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1	3,300	1.10	3,000			

$$\Delta\text{Base} = \text{\$Base}_{CurrentYear} - \text{\$Base}_{CurrentYear-1}$$
$$\Delta\text{Base} = 3{,}000 - 2{,}000 = 1{,}000$$

Since ΔBase >= 0 then:

$$\Delta\text{Base}_{CurrentYear} = \Delta\text{Base}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1	3,300	1.10	3,000	1,000		

4.1 $$\Delta\text{Current}_{CurrentYear} = \Delta\text{Base}_{CurrentYear} \times \text{Index}_{CurrentYear}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1	3,300	1.10	3,000	1,000	1,100	

4.2 For L in each layer from second year down to the current year:

$$\text{\$DVLIFO Cost}_L = \text{\$DVLIFO Cost}_{L-1} + \Delta\text{Current}_L$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X0	2,000	1.00	2,000	0	0	2,000
20X1	3,300	1.10	1,000	1,000	1,100	3,100

5 Use $\text{\$DVLIFO Cost}_{CurrentYear}$ as the Ending Inventory at DV LIFO Cost
Ending Inventory at Dollar Value LIFO for 20X1 = 3,100

2. **Basic Inventory Identity for Merchandising (2.1)**

Goods Available for Sale	=	+ Beginning Inventory	2,000
		+ Purchases	23,000
		+ Freight-in	0
		– Purchase Returns and Allowances for Defects	0
		– Slippage	0
Goods Available for Sale	=		25,000
Cost of Goods Sold	=	+ Goods Available for Sale	25,000
		– Ending Inventory	3,100
Cost of Goods Sold	=		21,900

2.4 Dollar Value LIFO: Comprehensive

Example 16: Dollar Value LIFO
Bismark Company compiled the following ending inventory information:

December 31	$Current	Inflation
20X1	200,000	-
20X2	299,000	0.15
20X3	300,000	0.05
20X4	351,000	0.10

What is ending inventory at Dollar Value LIFO for 20X1?
What is ending inventory at Dollar Value LIFO for 20X2?
What is ending inventory at Dollar Value LIFO for 20X3?
What is ending inventory at Dollar Value LIFO for 20X4?

Solution 16:

1. **Dollar Value LIFO Alogrithm (2.8.4): 20X1**

1 $Year_{CurrentYear}$ = The current year

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1						

2 $\$Current_{CurrentYear}$ = Ending Inventory at Current Costs (2.8.1)

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000					

3 Since CurrentYear = Base Year then:

$Index_{CurrentYear} = 1.00$
$\$Base_{CurrentYear} = \$Current_{CurrentYear}$
$\Delta Base_{CurrentYear} = 0$
$\Delta Current_{CurrentYear} = 0$
$\$DVLIFO\ Cost_{CurrentYear} = \$Current_{CurrentYear}$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000

5 Use $\$DVLIFO\ Cost_{CurrentYear}$ as the Ending Inventory at DV LIFO Cost

Ending Inventory at Dollar Value LIFO for 20X1 = 200,000

2. **Dollar Value LIFO Alogrithm (2.8.4): 20X2**

1 $Year_{CurrentYear}$ = The current year

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2						

2 $\$Current_{CurrentYear}$ = Ending Inventory at Current Costs (2.8.1)

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000					

4 Since CurrentYear > Base Year then:

$Index_{CurrentYear} = Index_{CurrentYear-1}$ + Inflation Rate
$\$Base_{CurrentYear} = \$Current_{CurrentYear} \div Index_{CurrentYear}$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000			

$\Delta Base = \$Base_{CurrentYear} - \$Base_{CurrentYear-1}$
$\Delta Base = 260{,}000 - 200{,}000 = 60{,}000$
Since ΔBase >= 0 then:
$\Delta Base_{CurrentYear} = \Delta Base$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000		

4.1 $\Delta Current_{CurrentYear} = \Delta Base_{CurrentYear} \times Index_{CurrentYear}$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000	69,000	

4.2 For L in each layer from second year down to the current year:

$\$\text{DVLIFO Cost}_L = \$\text{DVLIFO Cost}_{L-1} + \Delta\text{Current}_L$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000	69,000	269,000

5 Use $\$\text{DVLIFO Cost}_{CurrentYear}$ as the Ending Inventory at DV LIFO Cost

Ending Inventory at Dollar Value LIFO for 20X2 = 269,000

3. **Dollar Value LIFO Alogrithm (2.8.4): 20X3**

1 $\text{Year}_{CurrentYear}$ = The current year

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000	69,000	269,000
20X3						

2 $\$\text{Current}_{CurrentYear}$ = Ending Inventory at Current Costs (2.8.1)

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000	69,000	269,000
20X3	300,000					

4 Since CurrentYear > Base Year then:

$\text{Index}_{CurrentYear} = \text{Index}_{CurrentYear-1} + \text{Inflation Rate}$

$\$\text{Base}_{CurrentYear} = \$\text{Current}_{CurrentYear} \div \text{Index}_{CurrentYear}$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	60,000	69,000	269,000
20X3	300,000	1.20	250,000			

$\Delta\text{Base} = \$\text{Base}_{CurrentYear} - \$\text{Base}_{CurrentYear-1}$

$\Delta\text{Base} = 250{,}000 - 260{,}000 = -10{,}000$

Since $\Delta\text{Base} < 0$ then:

Peel Off = $|\ \Delta Base\ |$

Peel Off = 10,000

For L in each layer from the previous year up to the second year:

Since $\Delta\text{Base}_L >$ Peel Off then:

$\Delta\text{Base}_L = \Delta\text{Base}_L -$ Peel Off

$\Delta\text{Current}_L = \Delta\text{Base}_L \times \text{Index}_L$

Goto 4.2

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	269,000
20X3	300,000	1.20	250,000			

4.2 For L in each layer from second year down to the current year:

$\$\text{DVLIFO Cost}_L = \$\text{DVLIFO Cost}_{L-1} + \Delta\text{Current}_L$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500

5 Use $\$\text{DVLIFO Cost}_{CurrentYear}$ as the Ending Inventory at DV LIFO Cost

Ending Inventory at Dollar Value LIFO for 20X3 = 257,500

4. **Dollar Value LIFO Alogrithm (2.8.4): 20X4**

1 $\text{Year}_{CurrentYear}$ = The current year

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4						

2 $\$\text{Current}_{CurrentYear}$ = Ending Inventory at Current Costs (2.8.1)

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4	351,000					

4 Since CurrentYear > Base Year then:

$$\text{Index}_{CurrentYear} = \text{Index}_{CurrentYear-1} + \text{Inflation Rate}$$

$$\$\text{Base}_{CurrentYear} = \$\text{Current}_{CurrentYear} \div \text{Index}_{CurrentYear}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4	351,000	1.30	270,000			

$$\Delta\text{Base} = \$\text{Base}_{CurrentYear} - \$\text{Base}_{CurrentYear-1}$$

$$\Delta\text{Base} = 270{,}000 - 250{,}000 = 20{,}000$$

Since ΔBase >= 0 then:

$$\Delta\text{Base}_{CurrentYear} = \Delta\text{Base}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4	351,000	1.30	270,000	20,000		

4.1 $$\Delta\text{Current}_{CurrentYear} = \Delta\text{Base}_{CurrentYear} \times \text{Index}_{CurrentYear}$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4	351,000	1.30	270,000	20,000	26,000	

4.2 For L in each layer from second year down to the current year:

$$\$\text{DVLIFO Cost}_L = \$\text{DVLIFO Cost}_{L-1} + \Delta\text{Current}_L$$

Year	$Current	Index	$Base	ΔBase	ΔCurrent	$DVLIFO Cost
20X1	200,000	1.00	200,000	0	0	200,000
20X2	299,000	1.15	260,000	~~60,000~~ 50,000	~~69,000~~ 57,500	~~269,000~~ 257,500
20X3	300,000	1.20	250,000			257,500
20X4	351,000	1.30	270,000	20,000	26,000	283,500

5 Use $\$\text{DVLIFO Cost}_{CurrentYear}$ as the Ending Inventory at DV LIFO Cost

Ending Inventory at Dollar Value LIFO for 20X4 = 283,500

Chapter 3

Property Plant and Equipment Examples

3.1 Self-constructed Asset

Example 17: Self-constructed Asset

A firm successfully completed the construction of its new retail outlet. Total incurred costs include:
Materials = $200,000
Labor = $400,000
Incremental overhead = $120,000
Capitalized interest per FAS 34 = $20,000
Market value upon completion = $730,000
What amount of loss should be recognized as a result of this construction?

Solution 17:

1. **Asset Cost (3.6.1)**
   Asset Cost = Materials +
   Labor +
   Incremental Overhead +
   Capitalized Interest (3.7)
   Asset Cost = 200,000 + 400,000 + 120,000 + 20,000 = 740,000

2. **Self-contructed Asset Journal Entry (3.6.2)**
   Since Asset Cost (3.6.1) > Cost If Outsourced then:
   (Loss) Amount = Cost If Outsourced – Asset Cost (3.6.1)
   (Loss) Amount = 730,000 – 740,000 = -10,000

		Debit	Credit
XX/XX/XX	Asset_{item}	Cost If Outsourced	
	Loss on Self-constructed Asset	(Loss) Amount	
	Cash and/or Liability		Asset Cost (3.6.1)

		Debit	Credit
XX/XX/XX	Retail Outlet	730,000	
	Loss on Self-constructed Asset	10,000	
	Cash and/or Liability		740,000

3.2 Impairment Loss

Example 18: Impairment Loss

Year-end data on a plant asset currently in use is as follows:
Remaining useful life = 4 years
Book value = $96,000
Annual estimated gross cash inflows = $23,000
Annual estimated maintenance and other costs = $3,000
Estimated residual (market) value at end of current year = $40,000
Estimated residual (market) value four years from end of current year = $6,000
What amount of impairment loss is recorded on this asset at the end of the current year?

Solution 18:

1. **Equipment Recoverability (3.14.1)**
   Equipment Recoverability = $\sum_{i=1}^{n}$ Undiscounted Expected Future Net Cash Inflow$_i$
   –OR–
   Equipment Recoverability = Remaining Useful Life Years ×
   [Estimated Annual Cash Inflow –
   Estimated Annual Maintenance Costs] +
   Estimated Residual Value
   Equipment Recoverability = 4 × [23,000 – 3,000] + 6,000 = 86,000

2. **Recoverability Test (3.14.2)**
   If Equipment Recoverability (3.14.1) < Book Value (3.12.4) then:
   impaired
   If Equipment Recoverability (3.14.1) >= Book Value (3.12.4) then:
   not impaired
   Since 86,000 < 96,000 then:
   impaired

3. **(Loss) on Impairment, If Continued Use (3.14.3)**
   (Loss) on Impairment If Continued Use = Fair Value (← if known) – Book Value (3.12.4)
   or
   Equipment Recoverability (3.14.1) – Book Value (3.12.4)
   (Loss) on Impairment If Continued Use = 40,000 – 96,000 = -54,000

3.3 Natural Resources Depletion

Example 19: Natural Resources Depletion
MineCo Inc. started a natural resource exploitation venture this year. The mine is expected to yield 1 million tons of ore. Relevant data for this year:
Cost to acquire and develop the mineral rights = $900,000
Exploration costs = $2,100,000
Extraction costs = $500,000
Ore extracted = 200,000 tons
Sold = $0

Compute the ending balance in the inventory account using the full costing method (in millions). Note: use 12/31/X1 for all journal entries.

Solution 19:

1. **Acquistion Costs (3.15.1)**
   Since Purchased Property then:

		Debit	Credit
XX/XX/XX	Property$_{item}$ (3.1)	(3.1.6)	
	Cash and/or Liability		(3.1.6)

   Development Costs (3.15.5)
   Since Purchased Property then:

		Debit	Credit
XX/XX/XX	Property$_{item}$ (3.1)	Cost Amount	
	Cash and/or Liability		Cost Amount

		Debit	Credit
12/31/X1	Mine	900,000	
	Cash		900,000

2. **Exploration: Full Cost (3.15.4)**
   Whether Successful or Not and Purchased Property:

		Debit	Credit
XX/XX/XX	Property$_{item}$ (3.1)	Cost Amount	
	Cash and/or Liability		Cost Amount

		Debit	Credit
12/31/X1	Mine	2,100,000	
	Cash		2,100,000

3. **Production Costs (3.15.6)**

		Debit	Credit
XX/XX/XX	Inventory_{item}	Cost Amount	
	Cash and/or Liability		Cost Amount

		Debit	Credit
12/31/X1	Ore Inventory	500,000	
	Cash		500,000

Ledger

Ore Inventory

12/31/X1 500,000	
balance 500,000	

4. **Capitalized Costs (3.15.13)**

Capitalized Costs =

+ Acquisition (3.15.1) and Development (3.15.5)	900,000
+ Exploration Costs (3.15.2)	2,100,000
+ Present Value of Asset Retirement Obligation (3.15.11)	0
Capitalized Costs =	3,000,000

5. **Depletion Base (3.15.14)**

Depletion Base =
+ Capitalized Costs (3.15.13)
– Residual Value

Depletion Base = 3,000,000 – 0 = 3,000,000

6. **Depletion Rate (3.15.15)**

$$\text{Depletion Rate} = \frac{\text{Depletion Base (3.15.14)}}{\text{Estimated Recoverable Units}}$$

$$\text{Depletion Rate} = \frac{3{,}000{,}000}{1{,}000{,}000} = 3$$

7. **Natural Resources Depletion (3.15.16)**

Depletion Amount = Depletion Rate (3.15.15) ×
Depleted Units

		Debit	Credit
XX/XX/XX	Inventory_{item}	Depletion Amount	
	$\text{Accumulated Depletion}_{item}$		Depletion Amount

Depletion Amount = 3 × 200,000 = 600,000

		Debit	Credit
12/31/X1	Ore Inventory	600,000	
	Accumulated Depletion Mine		600,000

Ledger

Ore Inventory

12/31/X1 500,000	
12/31/X1 600,000	
balance 1,100,000	

3.4 Natural Resources Restoration

Example 20: Natural Resources Restoration

A firm's natural resource exploitation site will require an expenditure of $5 million to reclaim the site so that it is environmentally acceptable. That expenditure is expected to be made five years from now. The present value today of that amount is $3.5 million. Because of this obligation, by what amount will total depletion on the site increase, and how much accretion expense (in total) will be recognized, over the five years (in millions)? Note: use 12/31/XX for all journal entries.

Solution 20:

1. **Present Value of Asset Retirement Obligation (3.15.11)**
   Present Value of Asset Retirement Obligation =
   pv[Asset Retirement Obligation (3.15.9), Discount Rate (3.15.10), Excavation Years]
   Present Value of Asset Retirement Obligation = 3,500,000

   Since Purchased Property then:

		Debit	Credit
XX/XX/XX	Property$_{item}$ (3.1)	(3.15.11)	
	Asset Retirement Liability (3.15.7)		(3.15.11)

		Debit	Credit
12/31/X1	Exploration Site	3,500,000	
	Asset Retirement Liability		3,500,000

2. **Capitalized Costs (3.15.13)**
   Capitalized Costs =

+ Acquisition Costs (3.15.1)	x
+ Exploration Costs (3.15.2)	y
+ Development Costs (3.15.5)	z
+ Present Value of Asset Retirement Obligation (3.15.11)	3,500,000

   Capitalized Costs = x + y + z + 3,500,000

3. **Depletion Base (3.15.14)**
   Depletion Base =
   + Capitalized Costs (3.15.13)
   – Residual Value
   Depletion Base = x + y + z + 3,500,000 – 0
   Depletion Base = 3,500,000 increase

4. **Accretion Expense (3.15.12)**

$$\text{Accretion Expense Amount} = \frac{\text{Asset Retirement Obligation (3.15.9)} - \text{PV of Asset Retirement Obligation (3.15.11)}}{\text{Excavation Years}}$$

$$\text{Accretion Expense Amount} = \frac{5{,}000{,}000 - 3{,}500{,}000}{5} = 300{,}000$$

		Debit	Credit
XX/XX/XX	Accretion Expense	Accretion Expense Amount	
	Asset Retirement Liability (3.15.7)		Accretion Expense Amount

		Debit	Credit
12/31/X1	Accretion Expense	300,000	
	Asset Retirement Liability		300,000
		Debit	Credit
12/31/X2	Accretion Expense	300,000	
	Asset Retirement Liability		300,000
		Debit	Credit
12/31/X3	Accretion Expense	300,000	
	Asset Retirement Liability		300,000
		Debit	Credit
12/31/X4	Accretion Expense	300,000	
	Asset Retirement Liability		300,000
		Debit	Credit
12/31/X5	Accretion Expense	300,000	
	Asset Retirement Liability		300,000

Ledger

Excretion Expense

12/31/X1 300,000	
12/31/X2 300,000	
12/31/X3 300,000	
12/31/X4 300,000	
12/31/X5 300,000	
balance 1,500,000	

3.5 Interest Capitalization

Example 21: Interest Capitalization
A firm began construction of a building in 20X1; the construction qualifies for interest capitalization. Two payments were made to the contractor during 20X1: April 1, $100,000; October 1, $100,000. Outstanding all year were (1) 5%, $60,000 construction loan, (2) 6% average rate on debt unrelated to the construction, total principal $400,000. What is the ending balance in Building Under Construction if the specific method is used to capitalize interest.

Solution 21:

1. **Make April 1 Payment**

		Debit	Credit
4/1/X1	Building Under Construction	100,000	
	Cash		100,000

Make October 1 Payment

		Debit	Credit
10/1/X1	Building Under Construction	100,000	
	Cash		100,000

Ledger

Building Under Construction

4/1/X1 100,000	
10/1/X1 100,000	
balance 200,000	

2. **Weighted Average Accumulated Expenditure, If Discrete Payments (3.7.4)**
Let n = the number of expenditures for the construction project during the year.
Weighted-Average Accumulated Expenditure = Asset Under Construction$_{item}$ Beginning Balance + $\sum_{i=1}^{n}$[Expenditure Amount$_i$ × Capitalization Period for Expenditure$_i$(3.7.3)]

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/XX	Asset Under Construction$_{item}$	$\frac{\text{Number of Project Months In Year}}{\text{Number of Project Months In Year}}$	WAAE$_0$
Date$_1$	Amount$_1$	$\frac{\text{Months Remaining After Expenditure}_1}{\text{Number of Project Months In Year}}$	WAAE$_1$
...	...	...	...
Date$_n$	Amount$_n$	$\frac{\text{Months Remaining After Expenditure}_n}{\text{Number of Project Months In Year}}$	WAAE$_n$
			WAAE (3.7.4)

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/X1	0	12 ÷ 12	0
4/1/X1	100,000	9 ÷ 12	75,000
10/1/X1	100,000	3 ÷ 12	25,000
			(3.7.4) 100,000

3. **Excess Accumulated Principal (3.9.1)**
Excess Accumulated Principal = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) – Specific Construction Debt Principal
Excess Accumulated Principal = 100,000 – 60,000 = 40,000

4. **Specific Construction Avoidable Interest (3.9.2)**
If Excess Accumulated Principal <= 0 then:
Specific Construction Avoidable Interest = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) × Specific Construction Debt Rate × Fraction of the Year
If Excess Accumulated Principal > 0 then:
Specific Construction Avoidable Interest = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
Since Excess Accumulated Principal > 0 then:
Specific Construction Avoidable Interest = 60,000 × 0.05 × $\frac{12}{12}$ = 3,000

5. **Specific Construction Interest Expense (3.9.3)**
   Specific Construction Interest Expense = Specific Construction Debt Principal ×
   Specific Construction Debt Rate ×
   Fraction of the Year
   Specific Construction Interest Expense = $60{,}000 \times 0.05 \times \frac{12}{12} = 3{,}000$

6. **Sum Other Debt Annual Interest (3.9.4)**
   Sum Other Debt Annual Interest = $\sum_{i=1}^{n}$ Annual Interest For Other Debt Principal$_i$
   Sum Other Debt Annual Interest = $400{,}000 \times 0.06 = 24{,}000$

7. **Sum Other Debt Principal (3.9.5)**
   Sum Other Debt Principal = $\sum_{i=1}^{n}$ Other Debt Principal$_i$
   Sum Other Debt Principal = 400,000

8. **Other Debt Weighted Average Interest Rate (3.9.6)**
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{\text{Sum Other Debt Annual Interest (3.9.4)}}{\text{Sum Other Debt Principal (3.9.5)}}$$
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{24{,}000}{400{,}000} = 0.06$$

9. **Separated Avoidable Interest (3.9.7)**
   If Excess Accumulated Principal (3.9.1) <= 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2)
   If Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2) +
   [Excess Accumulated Principal (3.9.1) ×
   Other Debt Weighted-Average Interest Rate (3.9.6) ×
   Fraction of the Year]
   Since Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = $3{,}000 + [40{,}000 \times 0.06 \times \frac{12}{12}] = 5{,}400$

10. **Avoidable Interest (3.10.1)**
    Avoidable Interest = Comingled Avoidable Interest (3.8.4) or
    Separated Avoidable Interest (3.9.7)
    Avoidable Interest = 5,400

11. **Actual Interest (3.10.2)**
    Actual Interest = Sum Comingled Actual Interest (3.8.1) or
    [Sum Other Debt Annual Interest (3.9.4) × Fraction of the Year] +
    Specific Construction Interest Expense (3.9.3)
    Actual Interest = $[24{,}000 \times \frac{12}{12}] + 3{,}000 = 27{,}000$

12. **Interest Capitalization (3.10.3)**
    If Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = Avoidable Interest (3.10.1)
    If Avoidable Interest (3.10.1) ≥ Actual Interest (3.10.2) then:
    Interest Capitalization = Actual Interest (3.10.2)
    Since Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = 5,400

13. **Interest Capitalization Journal Entry (3.10.4)**

		Debit	Credit
12/31/XX	Asset Under Construction$_{item}$	(3.10.3)	
	Interest Expense		(3.10.3)

		Debit	Credit
12/31/X1	Building Under Construction	5,400	
	Interest Expense		5,400

Ledger

Building Under Construction

4/1/X1 100,000	
10/1/X1 100,000	
12/31/X1 5,400	
balance 205,400	

3.6 Interest Capitalization

Example 22: Interest Capitalization

On January 1, 20X6, the Mills Conveying Equipment Company began construction of a building to be used as its office headquarters. The building was completed on June 30, 20X7. Expenditures on the project for 20X6, mainly payments to subcontractors, were as follows:

January 3, 20X6	$500,000
March 31, 20X6	400,000
September 30, 20X6	600,000

The firm's debt is as follows:

Construction Loan	$1,000,000	8%
Note	2,000,000	6%
Note	4,000,000	12%

Provide the 12/31/X6 journal entry for interest capitalization, assuming separated debt.

Solution 22:

1. **Weighted Average Accumulated Expenditure, If Discrete Payments (3.7.4)**
   Let n = the number of expenditures for the construction project during the year.
   Weighted-Average Accumulated Expenditure = Asset Under Construction$_{item}$ Beginning Balance + $\sum_{i=1}^{n}$[Expenditure Amount$_i$ × Capitalization Period for Expenditure$_i$(3.7.3)]

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/XX	Asset Under Construction$_{item}$	$\frac{\text{Number of Project Months In Year}}{\text{Number of Project Months In Year}}$	WAAE$_0$
Date$_1$	Amount$_1$	$\frac{\text{Months Remaining After Expenditure}_1}{\text{Number of Project Months In Year}}$	WAAE$_1$
...	...	...	...
Date$_n$	Amount$_n$	$\frac{\text{Months Remaining After Expenditure}_n}{\text{Number of Project Months In Year}}$	WAAE$_n$
			WAAE (3.7.4)

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/X6	0	12 ÷ 12	0
1/3/X6	500,000	12 ÷ 12	500,000
3/31/X6	400,000	9 ÷ 12	300,000
9/30/X6	600,000	3 ÷ 12	150,000
			(3.7.4) 950,000

2. **Excess Accumulated Principal (3.9.1)**
   Excess Accumulated Principal = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) – Specific Construction Debt Principal
   Excess Accumulated Principal = 950,000 – 1,000,000 = -50,000

3. **Specific Construction Avoidable Interest (3.9.2)**
   If Excess Accumulated Principal <= 0 then:
   Specific Construction Avoidable Interest = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) × Specific Construction Debt Rate × Fraction of the Year
   If Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Since Excess Accumulated Principal <= 0 then:
   Specific Construction Avoidable Interest = 950,000 × 0.08 × $\frac{12}{12}$ = 76,000

4. **Specific Construction Interest Expense (3.9.3)**
   Specific Construction Interest Expense = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Specific Construction Interest Expense = 1,000,000 × 0.08 × $\frac{12}{12}$ = 80,000

5. **Sum Other Debt Annual Interest (3.9.4)**
   Sum Other Debt Annual Interest = $\sum_{i=1}^{n}$ Annual Interest For Other Debt Principal$_i$
   Sum Other Debt Annual Interest = (2,000,000 × 0.06) + (4,000,000 × 0.12) = 600,000

6. **Sum Other Debt Principal (3.9.5)**
   Sum Other Debt Principal = $\sum_{i=1}^{n}$ Other Debt Principal$_i$
   Sum Other Debt Principal = 2,000,000 + 4,000,000 = 6,000,000

7. **Other Debt Weighted Average Interest Rate (3.9.6)**
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{\text{Sum Other Debt Annual Interest (3.9.4)}}{\text{Sum Other Debt Principal (3.9.5)}}$$
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{600{,}000}{6{,}000{,}000} = 0.10$$

8. **Separated Avoidable Interest (3.9.7)**
   If Excess Accumulated Principal (3.9.1) <= 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2)
   If Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2) +
   [Excess Accumulated Principal (3.9.1) ×
   Other Debt Weighted-Average Interest Rate (3.9.6) ×
   Fraction of the Year]
   Since Excess Accumulated Principal (3.9.1) <= 0 then:
   Separated Avoidable Interest = 76,000

9. **Avoidable Interest (3.10.1)**
   Avoidable Interest = Comingled Avoidable Interest (3.8.4) or
   Separated Avoidable Interest (3.9.7)
   Avoidable Interest = 76,000

10. **Actual Interest (3.10.2)**
    Actual Interest = Sum Comingled Actual Interest (3.8.1) or
    [Sum Other Debt Annual Interest (3.9.4) × Fraction of the Year] +
    Specific Construction Interest Expense (3.9.3)
    Actual Interest = [600,000 × $\frac{12}{12}$] + 80,000 = 680,000

11. **Interest Capitalization (3.10.3)**
    If Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = Avoidable Interest (3.10.1)
    If Avoidable Interest (3.10.1) ≥ Actual Interest (3.10.2) then:
    Interest Capitalization = Actual Interest (3.10.2)
    Since Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = 76,000

12. **Interest Capitalization Journal Entry (3.10.4)**

		Debit	Credit
12/31/XX	Asset Under Construction$_{item}$	(3.10.3)	
	Interest Expense		(3.10.3)

		Debit	Credit
12/31/X6	Headquarters Building Under Construction	76,000	
	Interest Expense		76,000

3.7 Interest Capitalization

Example 23:
On January 1, 20X6, the Mills Conveying Equipment Company began construction of a building to be used as its office headquarters. The building was completed on June 30, 20X7. Expenditures on the project for 20X6, mainly payments to subcontractors, were as follows:

January 3, 20X6	$500,000
March 31, 20X6	400,000
September 30, 20X6	600,000

The firm's debt is as follows:

Construction Loan	$500,000	8%
Note	2,000,000	6%
Note	4,000,000	12%

Provide the 12/31/X6 journal entry for interest capitalization, assuming separated debt.

Solution 23:

1. **Weighted Average Accumulated Expenditure, If Discrete Payments (3.7.4)**
   Let n = the number of expenditures for the construction project during the year.
   Weighted-Average Accumulated Expenditure = Asset Under Construction$_{item}$ Beginning Balance + $\sum_{i=1}^{n}$[Expenditure Amount$_i$ × Capitalization Period for Expenditure$_i$(3.7.3)]

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/XX	Asset Under Construction$_{item}$	$\frac{\text{Number of Project Months In Year}}{\text{Number of Project Months In Year}}$	WAAE$_0$
Date$_1$	Amount$_1$	$\frac{\text{Months Remaining After Expenditure}_1}{\text{Number of Project Months In Year}}$	WAAE$_1$
...	...	...	...
Date$_n$	Amount$_n$	$\frac{\text{Months Remaining After Expenditure}_n}{\text{Number of Project Months In Year}}$	WAAE$_n$
			WAAE (3.7.4)

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/X6	0	12 ÷ 12	0
1/3/X6	500,000	12 ÷ 12	500,000
3/31/X6	400,000	9 ÷ 12	300,000
9/30/X6	600,000	3 ÷ 12	150,000
			(3.7.4) 950,000

2. **Excess Accumulated Principal (3.9.1)**
   Excess Accumulated Principal = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) – Specific Construction Debt Principal
   Excess Accumulated Principal = 950,000 – 500,000 = 450,000

3. **Specific Construction Avoidable Interest (3.9.2)**
   If Excess Accumulated Principal <= 0 then:
   Specific Construction Avoidable Interest = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) × Specific Construction Debt Rate × Fraction of the Year
   If Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Since Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = 500,000 × 0.08 × $\frac{12}{12}$ = 40,000

4. **Specific Construction Interest Expense (3.9.3)**
   Specific Construction Interest Expense = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Specific Construction Interest Expense = 500,000 × 0.08 × $\frac{12}{12}$ = 40,000

5. **Sum Other Debt Annual Interest (3.9.4)**
   Sum Other Debt Annual Interest = $\sum_{i=1}^{n}$ Annual Interest For Other Debt Principal$_i$
   Sum Other Debt Annual Interest = (2,000,000 × 0.06) + (4,000,000 × 0.12) = 600,000

6. **Sum Other Debt Principal (3.9.5)**
   Sum Other Debt Principal = $\sum_{i=1}^{n}$ Other Debt Principal$_i$
   Sum Other Debt Principal = 2,000,000 + 4,000,000 = 6,000,000

7. **Other Debt Weighted Average Interest Rate (3.9.6)**
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{\text{Sum Other Debt Annual Interest (3.9.4)}}{\text{Sum Other Debt Principal (3.9.5)}}$$

Other Debt Weighted Average Interest Rate = $\frac{600{,}000}{6{,}000{,}000} = 0.10$

8. **Separated Avoidable Interest (3.9.7)**
   If Excess Accumulated Principal (3.9.1) <= 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2)
   If Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2) +
   [Excess Accumulated Principal (3.9.1) ×
   Other Debt Weighted-Average Interest Rate (3.9.6) ×
   Fraction of the Year]
   Since Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = 40,000 + [450,000 × 0.10 × $\frac{12}{12}$] = 85,000

9. **Avoidable Interest (3.10.1)**
   Avoidable Interest = Comingled Avoidable Interest (3.8.4) or
   Separated Avoidable Interest (3.9.7)
   Avoidable Interest = 85,000

10. **Actual Interest (3.10.2)**
    Actual Interest = Sum Comingled Actual Interest (3.8.1) or
    [Sum Other Debt Annual Interest (3.9.4) × Fraction of the Year] +
    Specific Construction Interest Expense (3.9.3)
    Actual Interest = [600,000 × $\frac{12}{12}$] + 40,000 = 640,000

11. **Interest Capitalization (3.10.3)**
    If Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = Avoidable Interest (3.10.1)
    If Avoidable Interest (3.10.1) ≥ Actual Interest (3.10.2) then:
    Interest Capitalization = Actual Interest (3.10.2)
    Since Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = 85,000

12. **Interest Capitalization Journal Entry (3.10.4)**

		Debit	Credit
12/31/XX	Asset Under Construction$_{item}$	(3.10.3)	
	Interest Expense		(3.10.3)

		Debit	Credit
12/31/X6	Headquarters Building Under Construction	85,000	
	Interest Expense		85,000

3.8 Interest Capitalization

Example 24:
On January 1, 20X6, the Mills Conveying Equipment Company began construction of a building to be used as its office headquarters. The building was completed on June 30, 20X7. The Headquarters Building Under Construction account has a balance of $1,576,000. Expenditures on the project for 20X7, mainly payments to subcontractors, were as follows:

January 31, 20X7	$600,000
April 30, 20X7	300,000

The firm's debt is as follows:

Construction Loan	$1,000,000	8%
Note	2,000,000	6%
Note	4,000,000	12%

Provide the 6/30/X7 journal entry for interest capitalization, assuming separated debt.

Solution 24:

1. **Weighted Average Accumulated Expenditure, If Discrete Payments (3.7.4)**
   Let n = the number of expenditures for the construction project during the year.

Weighted-Average Accumulated Expenditure = Asset Under Construction$_{item}$ Beginning Balance + $\sum_{i=1}^{n}$[Expenditure Amount$_i$ × Capitalization Period for Expenditure$_i$(3.7.3)]

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/XX	Asset Under Construction$_{item}$	$\frac{\text{Number of Project Months In Year}}{\text{Number of Project Months In Year}}$	WAAE$_0$
Date$_1$	Amount$_1$	$\frac{\text{Months Remaining After Expenditure}_1}{\text{Number of Project Months In Year}}$	WAAE$_1$
...	...	...	...
Date$_n$	Amount$_n$	$\frac{\text{Months Remaining After Expenditure}_n}{\text{Number of Project Months In Year}}$	WAAE$_n$
			WAAE (3.7.4)

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/X7	1,576,000	6 ÷ 6	1,576,000
1/31/X7	600,000	5 ÷ 6	500,000
4/30/X7	300,000	2 ÷ 6	100,000
			(3.7.4) 2,176,000

2. **Excess Accumulated Principal (3.9.1)**
   Excess Accumulated Principal = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) – Specific Construction Debt Principal
   Excess Accumulated Principal = 2,176,000 – 1,000,000 = 1,176,000

3. **Specific Construction Avoidable Interest (3.9.2)**
   If Excess Accumulated Principal <= 0 then:
   Specific Construction Avoidable Interest = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) × Specific Construction Debt Rate × Fraction of the Year
   If Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Since Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = 1,000,000 × 0.08 × $\frac{6}{12}$ = 40,000

4. **Specific Construction Interest Expense (3.9.3)**
   Specific Construction Interest Expense = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Specific Construction Interest Expense = 1,000,000 × 0.08 × $\frac{6}{12}$ = 40,000

5. **Sum Other Debt Annual Interest (3.9.4)**
   Sum Other Debt Annual Interest = $\sum_{i=1}^{n}$ Annual Interest For Other Debt Principal$_i$
   Sum Other Debt Annual Interest = (2,000,000 × 0.06) + (4,000,000 × 0.12) = 600,000

6. **Sum Other Debt Principal (3.9.5)**
   Sum Other Debt Principal = $\sum_{i=1}^{n}$ Other Debt Principal$_i$
   Sum Other Debt Principal = 2,000,000 + 4,000,000 = 6,000,000

7. **Other Debt Weighted Average Interest Rate (3.9.6)**
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{\text{Sum Other Debt Annual Interest (3.9.4)}}{\text{Sum Other Debt Principal (3.9.5)}}$$
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{600{,}000}{6{,}000{,}000} = 0.10$$

8. **Separated Avoidable Interest (3.9.7)**
   If Excess Accumulated Principal (3.9.1) <= 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2)
   If Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2) + [Excess Accumulated Principal (3.9.1) × Other Debt Weighted-Average Interest Rate (3.9.6) × Fraction of the Year]

Since Excess Accumulated Principal (3.9.1) > 0 then:
Separated Avoidable Interest = 40,000 + [1,176,000 × 0.10 × $\frac{6}{12}$] = 98,800

9. **Avoidable Interest (3.10.1)**
   Avoidable Interest = Comingled Avoidable Interest (3.8.4) or
   Separated Avoidable Interest (3.9.7)
   Avoidable Interest = 98,800

10. **Actual Interest (3.10.2)**
    Actual Interest = Sum Comingled Actual Interest (3.8.1) or
    [Sum Other Debt Annual Interest (3.9.4) × Fraction of the Year] +
    Specific Construction Interest Expense (3.9.3)
    Actual Interest = [600,000 × $\frac{6}{12}$] + 40,000 = 340,000

11. **Interest Capitalization (3.10.3)**
    If Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = Avoidable Interest (3.10.1)
    If Avoidable Interest (3.10.1) ≥ Actual Interest (3.10.2) then:
    Interest Capitalization = Actual Interest (3.10.2)
    Since Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
    Interest Capitalization = 98,800

12. **Interest Capitalization Journal Entry (3.10.4)**

		Debit	Credit
12/31/XX	Asset Under Construction$_{item}$	(3.10.3)	
	Interest Expense		(3.10.3)

		Debit	Credit
6/30/X7	Headquarters Building Under Construction	98,800	
	Interest Expense		98,800

3.9 Interest Capitalization

Example 25:
A firm is self-constructing a warehouse and has paid the subcontractor the following: 1/1 $210,000, 3/1 $300,000, 5/1 $540,000, and 12/31 $450,000. To help finance this project, a three year note was issued for $750,000 with an interest rate of 15%. Moreover, the firm has the following outstanding debt: a five year note issue for $550,000 at 10% and a 10 year bond issue for $600,000 at 12%. The firm separates the construction loan from the other debt. What is the capitalized interest for the year? Also, provide the journal entry.

Solution 25:

1. **Weighted Average Accumulated Expenditure, If Discrete Payments (3.7.4)**
   Let n = the number of expenditures for the construction project during the year.
   Weighted-Average Accumulated Expenditure = Asset Under Construction$_{item}$ Beginning Balance +
   $\sum_{i=1}^{n}$[Expenditure Amount$_i$ ×
   Capitalization Period for Expenditure$_i$(3.7.3)]

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1/XX	Asset Under Construction$_{item}$	$\frac{\text{Number of Project Months In Year}}{\text{Number of Project Months In Year}}$	WAAE$_0$
Date$_1$	Amount$_1$	$\frac{\text{Months Remaining After Expenditure}_1}{\text{Number of Project Months In Year}}$	WAAE$_1$
...	...	...	...
Date$_n$	Amount$_n$	$\frac{\text{Months Remaining After Expenditure}_n}{\text{Number of Project Months In Year}}$	WAAE$_n$
			WAAE (3.7.4)

Expenditure Date	Expenditure Amount (1)	Capitalization Period (2)	WAAE (1) × (2)
1/1	0	12 ÷ 12	0
1/1	210,000	12 ÷ 12	210,000
3/1	300,000	10 ÷ 12	250,000
5/1	540,000	8 ÷ 12	360,000
12/31	450,000	0 ÷ 12	0
			(3.7.4) 820,000

2. **Excess Accumulated Principal (3.9.1)**
   Excess Accumulated Principal = Weighted-Average Accumulated Expenditure (3.7.4) or (3.7.6) – Specific Construction Debt Principal
   Excess Accumulated Principal = 820,000 – 750,000 = 70,000

3. **Specific Construction Avoidable Interest (3.9.2)**
   Since Excess Accumulated Principal > 0 then:
   Specific Construction Avoidable Interest = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Specific Construction Avoidable Interest = $750{,}000 \times 0.15 \frac{12}{12} = 112{,}500$

4. **Specific Construction Interest Expense (3.9.3)**
   Specific Construction Interest Expense = Specific Construction Debt Principal × Specific Construction Debt Rate × Fraction of the Year
   Specific Construction Interest Expense = $750{,}000 \times 0.15 \times \frac{12}{12} = 112{,}500$

5. **Sum Other Debt Annual Interest (3.9.4)**
   Sum Other Debt Annual Interest = $\sum_{i=1}^{n}$ Annual Interest For Other Debt Principal$_i$
   Sum Other Debt Annual Interest = $(550{,}000 \times 0.10) + (600{,}000 \times 0.12) = 127{,}000$

6. **Sum Other Debt Principal (3.9.5)**
   Sum Other Debt Principal = $\sum_{i=1}^{n}$ Other Debt Principal$_i$
   Sum Other Debt Principal = 550,000 + 600,000 = 1,150,000

7. **Other Debt Weighted Average Interest Rate (3.9.6)**
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{\text{Sum Other Debt Annual Interest (3.9.4)}}{\text{Sum Other Debt Principal (3.9.5)}}$$
   $$\text{Other Debt Weighted Average Interest Rate} = \frac{127{,}000}{1{,}150{,}000} = 0.1104$$

8. **Separated Avoidable Interest (3.9.7)**
   Since Excess Accumulated Principal (3.9.1) > 0 then:
   Separated Avoidable Interest = Specific Construction Avoidable Interest (3.9.2) + [Excess Accumulated Principal (3.9.1) × Other Debt Weighted-Average Interest Rate (3.9.6) × Fraction of the Year]
   Separated Avoidable Interest = $112{,}500 + [70{,}000 \times 0.1104 \times \frac{12}{12}] = 120{,}228$

9. **Avoidable Interest (3.10.1)**
   Avoidable Interest = Comingled Avoidable Interest (3.8.4) or Separated Avoidable Interest (3.9.7)
   Avoidable Interest = 120,228

10. **Actual Interest (3.10.2)**
    Actual Interest = Sum Comingled Actual Interest (3.8.1) or [Sum Other Debt Annual Interest (3.9.4) × Fraction of the Year] + Specific Construction Interest Expense (3.9.3)
    Actual Interest = $[127{,}000 \times \frac{12}{12}] + 112{,}500 = 239{,}500$

11. **Interest Capitalization (3.10.3)**
    If Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
        Interest Capitalization = Avoidable Interest (3.10.1)
    If Avoidable Interest (3.10.1) ≥ Actual Interest (3.10.2) then:
        Interest Capitalization = Actual Interest (3.10.2)
    Since Avoidable Interest (3.10.1) < Actual Interest (3.10.2) then:
        Interest Capitalization = 120,228

12.

		Debit	Credit
12/31/XX	Asset Under Construction	(3.10.3)	
	Interest Expense		(3.10.3)

		Debit	Credit
12/31/XX	Warehouse Under Construction	120,228	
	Interest Expense		120,228

Chapter 4

Liabilities Examples

4.1 Payroll Journal Entry: Simple

Example 26: Payroll
Employee Gross Pay = $30,000.
FICA = 7% and applies only to $20,000 of gross pay.
Employee Health Insurance Total Premium = $4,000.
Employee Health Insurance Percent Paid By Employer = 75%.
Federal Income Tax Withholding Amount = $6,000.

Record the 1/7/X1 Payroll Journal Entry: Salary/Wage Expense.
Record the 1/7/X1 Payroll Journal Entry: Payroll Tax Expense.

Solution 26:

1. **Social Security Employer Tax Amount (4.1.28)**
   Social Security Employer Tax Amount = Employee Gross Pay (4.1.1) × Social Security Employer Tax Rate (4.1.27)
   Social Security Employer Tax Amount = 20,000 × 0.07 = 1,400

2. **Social Security Employee Tax Amount (4.1.11)**
   Social Security Employee Tax Amount = Employee Gross Pay (4.1.1) × Social Security Employee Tax Rate (4.1.10)
   Social Security Employee Tax Amount = 20,000 × 0.07 = 1,400

3. **Health Insurance Employee Benefit Amount (4.1.18)**
   Health Insurance Employee Benefit Amount = Health Insurance Premium Amount × (1 – Percent Paid By Employee)
   Percent Paid By Employee = (1 – Percent Paid By Employer) = 1 – 0.75 = 0.25
   Health Insurance Employee Benefit Amount = 4,000 × (1 – 0.25) = 3,000

4. **Health Insurance Employee Cost Amount (4.1.19)**
   Health Insurance Employee Cost Amount = Health Insurance Premium Amount × Percent Paid By Employee
   Percent Paid By Employee = (1 – Percent Paid By Employer) = 1 – 0.75 = 0.25
   Health Insurance Employee Cost Amount = 4,000 × 0.25 = 1,000

5. **Gross Benefit (4.1.23)**
   Gross Benefit = Employee Gross Pay (4.1.1) +
   Health Insurance Employee Benefit Amount (4.1.18) +
   Retirement Plan Employee Benefit Amount (4.1.21)
   Gross Benefit = 30,000 + 3,000 + 0 = 33,000

6. **Employee Net Pay (4.1.25)**

Employee Net Pay =	+ Employee Gross Pay (4.1.1)	30,000
	– Federal Income Tax Withholding Amount (4.1.3)	6,000
	– State Income Tax Withholding Amount (4.1.5)	0
	– Social Security Employee Tax Amount (4.1.11)	1,400
	– Medicare Employee Tax Amount (4.1.15)	0
	– Union Dues Withholding (4.1.16)	0
	– Health Insurance Employee Cost Amount (4.1.19)	1,000
	– Retirement Employee Cost Amount (4.1.22)	0
Employee Net Pay =		21,600

7. **Payroll Journal Entry: Salary/Wage Expense (4.1.26)**

		Debit	Credit
XX/XX/XX	Salary/Wage Expense (4.1.24)	Benefit (4.1.23)	
	Federal Income Tax Withholding Payable		(4.1.3)
	State Income Tax Withholding Payable		(4.1.5)
	Social Security Tax Payable		(4.1.11)
	Medicare Tax Payable		(4.1.15)
	Union Dues Payable		(4.1.16)
	Health Insurance Payable		Health Premium Amount
	Retirement Plan Payable		Retirement Benefit Amount
	Payroll Payable		Employee Net Pay (4.1.25)

		Debit	Credit
1/7/X1	Salary/Wage Expense	33,000	
	Federal Income Tax Withholding Payable		6,000
	Social Security Tax Payable		1,400
	Health Insurance Payable		4,000
	Payroll Payable		21,600

8. **Payroll Tax Expense Amount (4.1.39)**

Payroll Tax Expense Amount =	+ Social Security Employer Tax Amount (4.1.28)	1,400
	+ Medicare Employer Tax Amount (4.1.30)	0
	+ Federal Unemployment Tax Amount (4.1.34)	0
	+ State Unemployment Tax Amount (4.1.37)	0
Payroll Tax Expense Amount =		1,400

9. **Payroll Journal Entry: Payroll Tax Expense (4.1.40)**

		Debit	Credit
XX/XX/XX	Payroll Tax Expense (4.1.38)	Payroll Tax Expense Amount (4.1.39)	
	Social Security Tax Payable		(4.1.28)
	Medicare Tax Payable		(4.1.30)
	Federal Unemployment Tax Payable		(4.1.34)
	State Unemployment Tax Payable		(4.1.37)

		Debit	Credit
1/7/X1	Payroll Tax Expense	1,400	
	Social Security Tax Payable		1,400

4.2 Payroll Journal Entry: Complex

Example 27: Payroll
Employee Gross Pay = $60,000.
FICA = 7% and applies to $40,000 of gross pay.
Federal Income Tax Withholding Amount = $18,000.
State income tax withholding = $2,000.
State unemployment tax rate = 5% and applies to $20,000 of gross pay.
Union dues withheld = $1,000.
Employee Health Insurance Total Premium = $3,000.
Employee Health Insurance Percent Paid By Employee = $\frac{1}{3}$.
Employee Retirement Plan Total Premium = $4,000.
Employee Retirement Plan Percent Paid By Employee = 25%.

Record the 1/7/X2 Payroll Journal Entry: Salary/Wage Expense.
Record the 1/7/X2 Payroll Journal Entry: Payroll Tax Expense.

Solution 27:

1. **Social Security Employer Tax Amount (4.1.28)**
   Social Security Employer Tax Amount = Employee Gross Pay (4.1.1) × Social Security Employer Tax Rate (4.1.27)
   Social Security Employer Tax Amount = 40,000 × 0.07 = 2,800

2. **Social Security Employee Tax Amount (4.1.11)**
   Social Security Employee Tax Amount = Employee Gross Pay (4.1.1) × Social Security Employee Tax Rate (4.1.10)
   Social Security Employee Tax Amount = 40,000 × 0.07 = 2,800

3. **Health Insurance Employee Benefit Amount (4.1.18)**
   Health Insurance Employee Benefit Amount = Health Insurance Premium Amount × (1 – Percent Paid By Employee)
   Health Insurance Employee Benefit Amount = 3,000 × $(1 - \frac{1}{3})$ = 2,000

4. **Health Insurance Employee Cost Amount (4.1.19)**
   Health Insurance Employee Cost Amount = Health Insurance Premium Amount × Percent Paid By Employee
   Health Insurance Employee Cost Amount = 3,000 × $\frac{1}{3}$ = 1,000

5. **Retirement Employee Benefit Amount (4.1.21)**
   Retirement Employee Benefit Amount = Retirement Benefit Amount × (1 – Percent Paid By Employee)
   Retirement Employee Benefit Amount = 4,000 × (1 – 0.25) = 3,000

6. **Retirement Employee Cost Amount (4.1.22)**
   Retirement Employee Cost Amount = Retirement Benefit Amount × Percent Paid By Employee
   Retirement Employee Cost Amount = 4,000 × 0.25 = 1,000

7. **Gross Benefit (4.1.23)**
   Gross Benefit = Employee Gross Pay (4.1.1) +
   Health Insurance Employee Benefit Amount (4.1.18) +
   Retirement Plan Employee Benefit Amount (4.1.21)
   Gross Benefit = 60,000 + 2,000 + 3,000 = 65,000

8. **Employee Net Pay (4.1.25)**

Employee Net Pay =	+ Employee Gross Pay (4.1.1)	60,000
	– Federal Income Tax Withholding Amount (4.1.3)	18,000
	– State Income Tax Withholding Amount (4.1.5)	2,000
	– Social Security Employee Tax Amount (4.1.11)	2,800
	– Medicare Employee Tax Amount (4.1.15)	0
	– Union Dues Withholding (4.1.16)	1,000
	– Health Insurance Employee Cost Amount (4.1.19)	1,000
	– Retirement Employee Cost Amount (4.1.22)	1,000
Employee Net Pay =		34,200

9. **Payroll Journal Entry: Salary/Wage Expense (4.1.26)**

		Debit	Credit
XX/XX/XX	Salary/Wage Expense (4.1.24)	Benefit (4.1.23)	
	Federal Income Tax Withholding Payable		(4.1.3)
	State Income Tax Withholding Payable		(4.1.5)
	Social Security Tax Payable		(4.1.11)
	Medicare Tax Payable		(4.1.15)
	Union Dues Payable		(4.1.16)
	Health Insurance Payable		Health Premium Amount
	Retirement Plan Payable		Retirement Benefit Amount
	Payroll Payable		Employee Net Pay (4.1.25)

		Debit	Credit
1/7/X2	Salary/Wage Expense	65,000	
	Federal Income Tax Withholding Payable		18,000
	State Income Tax Withholding Payable		2,000
	Social Security Tax Payable		2,800
	Health Insurance Payable		3,000
	Retirement Plan Payable		4,000
	Union Dues Payable		1,000
	Payroll Payable		34,200

10. **Federal Unemployment Tax Apply Amount (4.1.33)**
    Since Employee Gross Pay (4.1.1) >= $7,000 then:
    Federal Unemployment Tax Apply Amount = 7,000

11. **Federal Unemployment Tax Amount (4.1.34)**
    Since 0.0 < State Rate < 0.054 then:
    Federal Unemployment Tax Amount =
    Federal Unemployment Tax Apply Amount (4.1.33) × (0.06 - State Rate)
    Federal Unemployment Tax Amount = 7,000 × (0.06 - 0.05) = 70

12. **State Unemployment Tax Amount (4.1.37)**
    State Unemployment Tax Amount = 20,000 × 0.05 = 1,000

13. **Payroll Tax Expense Amount (4.1.39)**

Payroll Tax Expense Amount =	+ Social Security Employer Tax Amount (4.1.28)	2,800
	+ Medicare Employer Tax Amount (4.1.30)	0
	+ Federal Unemployment Tax Amount (4.1.34)	70
	+ State Unemployment Tax Amount (4.1.37)	1,000
Payroll Tax Expense Amount =		3,870

14. **Payroll Journal Entry: Payroll Tax Expense (4.1.40)**

		Debit	Credit
XX/XX/XX	Payroll Tax Expense (4.1.38)	Payroll Tax Expense Amount (4.1.39)	
	Social Security Tax Payable		(4.1.28)
	Medicare Tax Payable		(4.1.30)
	Federal Unemployment Tax Payable		(4.1.34)
	State Unemployment Tax Payable		(4.1.37)

		Debit	Credit
1/7/X2	Payroll Tax Expense	3,870	
	Social Security Tax Payable		2,800
	Federal Unemployment Tax Payable		70
	State Unemployment Tax Payable		1,000

4.3 Compensated Absenses

Example 28: Compensated Absenses
Davidson-Getty Chemicals has 8,000 employees. Each employee earns two weeks of paid vacation per year. Vacation time not taken in the year is carried over to subsequent years. During 20X6, 2,500 employees took both weeks' vacation, but at year-end, 5,500 employees had vacation time carryovers as follows:

Employee Count (1)	Vacation Weeks Earned but Not Taken (2)	Carryover Weeks (1) × (2)
2,500	0	0
2,000	1	2,000
3,500	2	7,000
8,000		9,000

Additional information follows:
Average weekly 20X6 salary = $600.
Employees taking both weeks of vacation in 20X6 earned in 20X6 = 2,500.
Employees taking only one week of vacation in 20X6 earned in 20X6 = 1,000.

Record the 20X6 Take Vacation Earned Current Year Journal Entry.
Record the 20X6 Accrue Vacation Adjusting Entry.

Weeks of vacation taken in 20X7 that were earned in 20X6 = 9,000.

Inflation rate for 20X6 – 20X7 = 5.556%.
Record the 20X7 Take Vacation Earned Prior Year Journal Entry.

Solution 28:

1. **Take Vacation Earned Current Year Journal Entry (4.2.1)**
   Actual Amount = [(2,000 × 1) + (2,500 × 2)] × 600 = 4,200,000

		Debit	Credit
XX/XX/XX	Salary/Wage Expense	Actual Amount	
	Cash or Salary/Wage Payable		Actual Amount

		Debit	Credit
20X6	Salary/Wage Expense	4,200,000	
	Cash or Salary/Wage Payable		4,200,000

2. **Total Carryover Weeks (4.2.4)**
   Total Carryover Weeks = $\sum_{i=0}^{n}$ Vacation Weeks Earned But Not Taken $(4.2.3)_i$ ×
   Employee Count of Those Who Accrued Vacation $(4.2.2)_i$ = 9,000

3. **Liability Amount (4.2.6)**
   Liability Amount = [Total Carryover Weeks (4.2.4) ×
   Average Weekly Pay] –
   Estimate of Benefits Not Expected to be Taken
   Liability Amount = [9,000 × 600] – 0 = 5,400,000

4. **Accrue Vacation Adjusting Entry (4.2.7)**

		Debit	Credit
12/31/XX	Salary/Wage Expense	Liability Amount (4.2.6)	
	Vacation Payable		Liability Amount (4.2.6)

		Debit	Credit
12/31/X6	Salary/Wage Expense	5,400,000	
	Vacation Payable		5,400,000

5. **Take Vacation Earned Prior Year: Salary/Wage Payable Amount (4.2.8)**
   Salary/Wage Payable Amount = Weeks Taken ×
   Average Weekly Pay ×
   (1 + Inflation Rate)
   –OR–
   Salary/Wage Payable Amount = Actual Amount
   Salary/Wage Payable Amount = 9,000 × 600 × (1 + 0.05556) ≅ 5,700,000

6. **Take Vacation Earned Prior Year: Vacation Payable Amount (4.2.9)**
   Vacation Payable Amount = Weeks Taken ×
   Average Weekly Pay
   Vacation Payable Amount = 9,000 × 600 = 5,400,000

7. **Take Vacation Earned Prior Year: Salary Expense Amount (4.2.10)**
   Salary Expense Amount = Salary/Wage Payable Amount (4.2.8) –
   Vacation Payable Amount (4.2.9)
   Salary Expense Amount = 5,700,000 – 5,400,000 = 300,000

8. **Take Vacation Earned Prior Year Journal Entry (4.2.11)**

		Debit	Credit
XX/XX/XX	Vacation Payable	(4.2.9)	
	Salary Expense	(4.2.10)	
	Salary/Wage Payable		(4.2.8)

		Debit	Credit
20X7	Vacation Payable	5,400,000	
	Salary Expense	300,000	
	Salary/Wage Payable		5,700,000

4.4 Warranty Claims: Expected Cash Flow Approach

Example 29: Warranty Claims: Expected Cash Flow Approach
End of year date = 12/31/20X6.
Risk Free Interest Rate = 5%.

Expected Cash Outflow Table

Year	Warranty Cost	Probability
20X7	$50,000	20%
20X7	$60,000	50%
20X7	$70,000	30%
20X8	$70,000	20%
20X8	$80,000	50%
20X8	$90,000	30%

Record the Warranty Claims Adjusting Journal Entry.

Solution 29:

1. **Estimated Warranty Claims: Expected Cash Outflow Method Table (4.3.4)**
   pv(1, 0.05) = 0.95238
   pv(2, 0.05) = 0.90703

Year	Warranty Cost	Probability	Cost × Probability (1)	$\sum_{x=1}^{n}$ (1) = Weighted Average (2)	PV of y at Risk Free Rate (3)	PV of Weighted Average (2) × (3)
20X7	$50,000	20%	$10,000			
20X7	60,000	50%	30,000			
20X7	70,000	30%	21,000	$61,000	0.95238	$58,095
20X8	70,000	20%	14,000			
20X8	80,000	50%	40,000			
20X8	90,000	30%	27,000	$81,000	0.90703	73,469
						131,564

2. **Estimated Warranty Claims: Expected Cash Flow Method (4.3.3)**
   Let x = a future Cost × Probability likelihood.
   Let n = the number of Cost × Probability likelihoods for year y.
   Let y = a future year.
   Let p = the number of years of the warranty period.
   Estimated Warranty Claims =
   $\sum_{y=1}^{p}\{\sum_{x=1}^{n}[\text{Expected Warranty Cost}_x \times \text{Probability of Cost}_x] \times \text{pv(y, Risk Free Rate)}\}$ = $131,564

3. **Warranty Claims Adjustment Amount (4.3.5)**
   Warrancy Claims Adjustment Amount = Estimated Warranty Claims (4.3.2) or (4.3.3) –
   Warranty Expense Debit Balance
   Warrancy Claims Adjustment Amount = 131,564 – 0 = 131,564

4. **Warranty Claims Adjusting Journal Entry (4.3.6)**

		Debit	Credit
XX/XX/XX	Warranty Expense	Adjustment Amount (4.3.5)	
	Warranty Liability		Adjustment Amount (4.3.5)

		Debit	Credit
12/31/X6	Warranty Expense	131,564	
	Warranty Liability		131,564

4.5 Bond Issue

Example 30: Bond Issue
Face Amount = $400,000.
Interest Payment Amount = $16,000.
Bond Issue Price = $379,699.
Bond Term = 3 years.

What is the Coupon Interest Rate?
What is the Total Interest Expense?
What is the Book Value of the bond issue after the 4th payment?
If 50 bonds were retired immediately after the 3rd payment at 102, what is the gain or loss recognized?

Solution 30:

1. **Interest Payment Amount (4.6.12)**
   Interest Payment Amount = Face Amount (4.6.5) $\times$ $\frac{\text{Coupon Interest Rate (4.6.10)}}{2}$
   $16{,}000 = 400{,}000 \times \frac{\text{Coupon Interest Rate}}{2}$
   Coupon Interest Rate $= \frac{16{,}000}{400{,}000} \times 2 = 0.08$

2. **Discount Amount (4.6.18)**
   Since the bond issue is a Discount Bond (4.6.17) then:
   Discount Amount = Face Amount (4.6.5) – Bond Issue Price (4.6.14)
   Discount Amount = 400,000 – 379,699 = 20,301

3. **Total Interest Cash (4.6.24)**
   Total Interest Cash = Interest Payment Amount (4.6.12) $\times$ 2 $\times$ Bond Term (4.6.9)
   Total Interest Cash = 16,000 $\times$ 2 $\times$ 3 = 96,000

4. **Total Interest Expense (4.6.25)**
   Since Discount Bond (4.6.17) then:
   Total Interest Expense = Total Interest Cash (4.6.24) + Discount Amount (4.6.18)
   Total Interest Expense = 96,000 + 20,301 = 116,301

5. **Bond Issue Price (4.6.14)**
   Bond Issue Price = pv[Face Amount (4.6.5), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Bond Term (4.6.9) $\times$ 2] + pva[Interest Payment Amount (4.6.12), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Bond Term (4.6.9) $\times$ 2]
   $379{,}699 = \text{pv}[400{,}000, \frac{\text{Market Interest Rate}}{2}, 3 \times 2] + \text{pva}[16{,}000, \frac{\text{Market Interest Rate}}{2}, 3 \times 2]$
   Market Interest Rate = 0.10

6. **Bond Issue Book Value (4.6.23)**
   Bond Issue Book Value = pv[Face Amount (4.6.5), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)] + pva[Interest Payment Amount (4.6.12), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)]
   Bond Issue Book Value $= \text{pv}[400{,}000, \frac{0.10}{2}, 2] + \text{pva}[16{,}000, \frac{0.10}{2}, 2] = 362{,}812 + 29{,}751 = 392{,}563$

7. **Percentage of Issue Reacquired (4.8.2)**
   Percentage of Issue Reacquired = $\frac{\text{Quantity of Bonds Reacquired} \times 1000}{\text{Face Amount (4.6.5)}}$
   Percentage of Issue Reacquired = $\frac{50 \times 1000}{400{,}000} = \frac{1}{8}$

8. **Reacquisition Face Amount (4.8.3)**
   Reacquisition Face Amount = Face Amount (4.6.5) ×
   Percentage of Issue Reacquired (4.8.2)
   Reacquisition Face Amount = $400,000 \times \frac{1}{8} = 50{,}000$

9. **Reacquisition Price (4.8.9)**
   Reacquisition Price = [Face Amount (4.6.5) ×
   Bond Quote Percentage (4.6.11) ×
   Percentage of Issue Reacquired (4.8.2)] +
   Reacquisition Interest Accrual Amount (4.8.8) +
   Reacquisition Fees
   Reacquisition Price = $[400{,}000 \times 1.02 \times \frac{1}{8}] + 0 + 0 = 51{,}000$

10. **Bond Issue Book Value (4.6.23)**
    Bond Issue Book Value =
    pv[Face Amount (4.6.5), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)] +
    pva[Interest Payment Amount (4.6.12), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)]
    Bond Issue Book Value = pv[400,000, $\frac{0.10}{2}$, 3] + pva[16,000, $\frac{.010}{2}$, 3] = 345,535 + 43,572 = 389,107

11. **Reacquisition Discount Amount (4.8.10)**
    Since the bond issue is a Discount Bond (4.6.17) then:
    Reacquisition Discount Amount = Face Amount (4.6.5) –
    Bond Issue Book Value (4.6.23)
    Reacquisition Discount Amount = 400,000 – 389,107 = 10,893

12. **Reacquisition Amortization Amount (4.8.12)**
    Since Discount Bond (4.6.17) then:
    Reacquisition Amortization Amount =
    Discount on Bonds Payable$_{issue}$ (4.6.19) Debit Balance –OR– Reacquisition Discount Amount (4.8.10) ×
    Percentage of Issue Reacquired (4.8.2)
    Reacquisition Amortization Amount = $10{,}893 \times \frac{1}{8} = 1{,}362$

13. **Gain or (Loss) on Reacquisition (4.8.14)**
    Since Discount Bond (4.6.17) then:
    Gain or (Loss) on Reacquisition = [Face Amount (4.6.5) –
    Discount on Bonds Payable$_{issue}$ (4.6.19) –
    Unamortized Bond Issue Costs$_{issue}$ (4.6.27)] ×
    Percentage of Issue Reacquired (4.8.2) –
    Reacquisition Interest Accrual Amount (4.8.8) –
    Reacquisition Fees –
    Reacquisition Price (4.8.9)
    Gain or (Loss) on Reacquisition = [400,000 – 10,893] × $\frac{1}{8}$ – 0 – 51,000 = -2,362

4.6 Installment Note: Simple

Example 31: Installment Note
A firm purchased a truck by paying $5,000 in cash and signing a $10,000 installment note with the following characteristics:

Note Amount = $10,000.
Payments Per Year = 1.
Note Interest Rate = 10%.
Market Interest Rate = 10%.
Note Term = 4 years.
Purchase date = 1/1/X8.

What is the purchase journal entry?
What is the first payment journal entry?

Solution 31:

1. **Market Period Interest Rate (4.5.4)**
   $$\text{Market Period Interest Rate} = \frac{\text{Market Interest Rate (4.5.1)}}{\text{Payments Per Year (4.5.3)}}$$
   $$\text{Market Period Interest Rate} = \frac{0.10}{1} = 0.10$$
2. **Note Period Interest Rate (4.5.5)**
   $$\text{Note Period Interest Rate} = \frac{\text{Note Interest Rate (4.5.2)}}{\text{Payments Per Year (4.5.3)}}$$
   $$\text{Note Period Interest Rate} = \frac{0.10}{1} = 0.10$$
3. **Period Payment Amount (4.5.6)**
   $$\text{Period Payment Amount} = \frac{\text{Note Amount}}{\text{pva[\$1, Note Period Interest Rate (4.5.5), Note Term} \times \text{Payments Per Year (4.5.3)}}$$
   $$\text{Period Payment Amount} = \frac{10{,}000}{\text{pva[\$1, 0.10, 4} \times \text{1}} = 3{,}155$$
4. **Present Value of Note (4.5.7)**
   Present Value of Note =
   pva[Period Payment (4.5.6), Market Period Interest Rate (4.5.4), Note Term × Payments Per Year (4.5.3)]
   Present Value of Note = pva[3,155, 0.10, 4 × 1] = 10,000
5. **Borrow Money or Purchase With Note (4.5.8)**

		Debit	Credit
XX/XX/XX	Cash or PP&E$_{item}$	Present Value of Note (4.5.7)	
	Notes Payable$_{issue}$		Present Value of Note (4.5.7)

		Debit	Credit
01/01/X8	Truck	15,000	
	Notes Payable Truck		10,000
	Cash		5,000

6. **Period Interest Expense Amount (4.5.9)**
   Period Interest Expense Amount = Note Payable$_{issue}$ Credit Balance × Market Period Interest Rate (4.5.4)
   Period Interest Expense Amount = 10,000 × 0.10 = 1,000
7. **Period Note Amortization Amount (4.5.10)**
   Period Note Amortization Amount = Period Payment Amount (4.5.6) – Period Interest Expense Amount (4.5.9)
   Period Note Amortization Amount = 3,155 – 1,000 = 2,155
8. **Make an Installment Note Payment (4.5.11)**

		Debit	Credit
XX/XX/XX	Interest Expense	Period Interest Expense Amount (4.5.9)	
	Note Payable$_{issue}$	Period Note Amortization Amount (4.5.10)	
	Cash		Period Payment Amount (4.5.6)

		Debit	Credit
03/31/X8	Interest Expense	1,000	
	Note Payable Truck	2,155	
	Cash		3,155

4.7 Installment Note: Complex

Example 32: Installment Note
A firm purchased a truck by paying $5,000 in cash and signing a $10,000 installment note with the following characteristics:

Note Amount = $10,000.
Payments Per Year = 4.

Note Interest Rate = 4%.
Market Interest Rate = 10%.
Note Term = 4 years.
Purchase date = 1/1/X8.
What is the purchase journal entry?
What is the first payment journal entry?

Solution 32:

1. **Market Period Interest Rate (4.5.4)**
   $$\text{Market Period Interest Rate} = \frac{\text{Market Interest Rate (4.5.1)}}{\text{Payments Per Year (4.5.3)}}$$
   $$\text{Market Period Interest Rate} = \frac{0.10}{4} = 0.025$$
2. **Note Period Interest Rate (4.5.5)**
   $$\text{Note Period Interest Rate} = \frac{\text{Note Interest Rate (4.5.2)}}{\text{Payments Per Year (4.5.3)}}$$
   $$\text{Note Period Interest Rate} = \frac{0.04}{4} = 0.01$$
3. **Period Payment Amount (4.5.6)**
   $$\text{Period Payment Amount} = \frac{\text{Note Amount}}{\text{pva[\$1, Note Period Interest Rate (4.5.5), Note Term} \times \text{Payments Per Year (4.5.3)}}$$
   $$\text{Period Payment Amount} = \frac{10{,}000}{\text{pva[\$1, 0.01, 4} \times 4} = 679$$
4. **Present Value of Note (4.5.7)**
   Present Value of Note =
   pva[Period Payment (4.5.6), Market Period Interest Rate (4.5.4), Note Term × Payments Per Year (4.5.3)]
   Present Value of Note = pva[679, 0.025, 4 × 4] = 8,864
5. **Borrow Money or Purchase With Note (4.5.8)**

		Debit	Credit
XX/XX/XX	Cash or PP&E$_{item}$	Present Value of Note (4.5.7)	
	Notes Payable$_{issue}$		Present Value of Note (4.5.7)

		Debit	Credit
01/01/X8	Truck	13,864	
	Notes Payable Truck		8,864
	Cash		5,000

6. **Period Interest Expense Amount (4.5.9)**
   Period Interest Expense Amount = Note Payable$_{issue}$ Credit Balance × Market Period Interest Rate (4.5.4)
   Period Interest Expense Amount = 8,864 × 0.025 = 222
7. **Period Note Amortization Amount (4.5.10)**
   Period Note Amortization Amount = Period Payment Amount (4.5.6) – Period Interest Expense Amount (4.5.9)
   Period Note Amortization Amount = 679 – 222 = 457
8. **Make an Installment Note Payment (4.5.11)**

		Debit	Credit
XX/XX/XX	Interest Expense	Period Interest Expense Amount (4.5.9)	
	Note Payable$_{issue}$	Period Note Amortization Amount (4.5.10)	
	Cash		Period Payment Amount (4.5.6)

		Debit	Credit
03/31/X8	Interest Expense	222	
	Note Payable Truck	457	
	Cash		679

4.8 Bond Early Reacquisition: Simple

Example 33: Bond Early Reacquisition
Face Amount per Bond = $1,000.

Bond Quantity Issued = 1.
Semiannual Interest Payments Remaining = 12.
Coupon Interest Rate = 4%.
Issuance Market Rate = 6%.
Retirement Market Rate = 8%.
Reacquisition Date = 6/30/X8.
What is the reacquisition journal entry?

Solution 33:

1. **Discount Bond (4.6.17)**
   A Discount Bond is a bond issue with the Coupon Interest Rate (4.6.10) less than the Market Interest Rate (4.6.13).

2. **Face Amount (4.6.5)**
   Face Amount = Face Amount per Bond (4.6.3) × Bond Quantity Issued (4.6.4)
   Face Amount = 1,000 × 1 = 1,000

3. **Reacquisition Face Amount (4.8.3)**
   Reacquisition Face Amount = Face Amount (4.6.5) × Percentage of Issue Reacquired (4.8.2)
   Reacquisition Face Amount = 1,000 × 1.00 = 1,000

4. **Interest Payment Amount (4.6.12)**
   Interest Payment Amount = Face Amount (4.6.5) × $\frac{\text{Coupon Interest Rate (4.6.10)}}{2}$
   Interest Payment Amount = 1,000 × $\frac{0.04}{2} = 20$

5. **Bond Issue Book Value (4.6.23)**
   Bond Issue Book Value =
   pv[Face Amount (4.6.5), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)] +
   pva[Interest Payment Amount (4.6.12), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Interest Payments (4.6.16)]
   Bond Issue Book Value = pv[1,000, $\frac{0.06}{2}$, 12] + pva[20, $\frac{0.04}{2}$, 12] = 900

6. **Bond Issue Book Value (4.6.23)**
   Since Discount Bond (4.6.17) then:
   Bond Issue Book Value = Bonds Payable$_{issue}$ (4.6.1) – Discount on Bonds Payable$_{issue}$ (4.6.19)
   Discount on Bonds Payable$_{issue}$ (4.6.19) = Bonds Payable$_{issue}$ (4.6.1) – Bond Issue Book Value
   Discount on Bonds Payable$_{issue}$ (4.6.19) = 1,000 – 900 = 100

7. **Reacquisition Amortization Amount (4.8.12)**
   Since Discount Bond (4.6.17) then:
   Reacquisition Amortization Amount =
   Discount on Bonds Payable$_{issue}$ (4.6.19) Debit Balance or Discount Amount (4.6.18) ×
   Percentage of Issue Reacquired (4.8.2)
   Reacquisition Amortization Amount = 100 × 1.00 = 100

8. **Reacquistion Price (4.8.9)**
   Reacquisition Price =
   {pv[Face Amount (4.6.5), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Payments] +
   pva[Interest Payment Amount (4.6.12), $\frac{\text{Market Interest Rate (4.6.13)}}{2}$, Remaining Payments]} ×
   Percentage of Issue Reacquired (4.8.2) +
   Reacquisition Interest Accrual Amount (4.8.8) +
   Reacquisition Fees
   Reacquisition Price =
   {pv[1,000, $\frac{0.08}{2}$, 12] + pva[20, $\frac{0.08}{2}$, 12]} × 1.00 + 0 + 0 = 812

9. **Gain or (Loss) on Reacquisition (4.8.14)**
   Since Discount Bond (4.6.17) then:
   Gain or (Loss) on Reacquisition = [Face Amount (4.6.5) –
   Discount on Bonds Payable$_{issue}$ (4.6.19) –
   Unamortized Bond Issue Costs$_{issue}$ (4.6.27)] ×
   Percentage of Issue Reacquired (4.8.2) –
   Reacquisition Interest Accrual Amount (4.8.8) –
   Reacquisition Fees –
   Reacquisition Price (4.8.9)
   Gain or (Loss) on Reacquisition = [1,000 – 100 – 0] × 1.00 – 0 – 0 – 812 = 88

10. **Reacquisition Journal Entry (4.8.15)**
    Since Discount Bond (4.6.17) and Gain (4.8.14) then:

		Debit	Credit
XX/XX/XX	Bonds Payable$_{issue}$ (4.6.1)	Face Amount (4.8.3)	
	Discount on Bonds Payable$_{issue}$		Amortization Amount (4.8.12)
	Unamortized Bond Issue Costs$_{issue}$		Unamortized Costs (4.8.13)
	Gain on Reacquisition		Gain (4.8.14)
	Cash		Reacquisition Price (4.8.9)

		Debit	Credit
06/30/X8	Bonds Payable	1,000	
	Discount on Bonds Payable		100
	Gain on Reacquisition		88
	Cash		812

4.9 Bond Early Reacquistion: Complex

Example 34: Bond Early Reacquisition
Face Amount per Bond = $1,000.
Bond Quantity Issued = 700.
Bond Date = 1/1/X7.
Coupon Interest Rate = 12%.
Issuance Market Rate = 14%.
Reacquisition Book Value = 676,288.
Reacquisition Price = 685,000.
What is the reacquisition journal entry?

Solution 34:

1. **Face Amount (4.6.5)**
   Face Amount = Face Amount per Bond (4.6.3) × Bond Quantity Issued (4.6.4)
   Face Amount = 1,000 × 700 = 700,000

2. **Discount Bond (4.6.17)**
   A Discount Bond is a bond issue with the Coupon Interest Rate (4.6.10) less than the Market Interest Rate (4.6.13).

3. **Bond Issue Book Value (4.6.23)**
   Since Discount Bond (4.6.17) then:
   Bond Issue Book Value = Bonds Payable$_{issue}$ (4.6.1) –
   Discount on Bonds Payable$_{issue}$ (4.6.19)
   Discount on Bonds Payable$_{issue}$ (4.6.19) = Bonds Payable$_{issue}$ (4.6.1) –
   Bond Issue Book Value
   Discount on Bonds Payable$_{issue}$ (4.6.19) = 700,000 – 676,288 = 23,712

4. **Gain or (Loss) on Reacquisition (4.8.14)**
   Since Discount Bond (4.6.17) then:

Gain or (Loss) on Reacquisition = [Face Amount (4.6.5) –
Discount on Bonds Payable$_{issue}$ (4.6.19) –
Unamortized Bond Issue Costs$_{issue}$ (4.6.27)] ×
Percentage of Issue Reacquired (4.8.2) –
Reacquisition Interest Accrual Amount (4.8.8) –
Reacquisition Fees –
Reacquisition Price (4.8.9)
Gain or (Loss) on Reacquisition = [700,000 – 23,712 – 0] × 1.00 – 0 – 0 – 685,000 = -8,712

5. **Reacquisition Face Amount (4.8.3)**
Reacquisition Face Amount = Face Amount (4.6.5) ×
Percentage of Issue Reacquired (4.8.2)
Reacquisition Face Amount = 700,000 × 1.00 = 700,000

6. **Reacquisition Amortization Amount (4.8.12)**
Since Discount Bond (4.6.17) then:
Reacquisition Amortization Amount =
Discount on Bonds Payable$_{issue}$ (4.6.19) Debit Balance or Discount Amount (4.6.18) ×
Percentage of Issue Reacquired (4.8.2)
Reacquisition Amortization Amount = 23,712 × 1.00 = 23,712

7. **Reacquisition Journal Entry (4.8.15)**
Since Discount Bond (4.6.17) and (Loss) (4.8.14) then:

		Debit	Credit
XX/XX/XX	Bonds Payable$_{issue}$ (4.6.1)	Face Amount (4.8.3)	
	Loss on Reacquisition	Loss (4.8.14)	
	Discount on Bonds Payable$_{issue}$		Amortization Amount (4.8.12)
	Unamortized Bond Issue Costs$_{issue}$		Unamortized Costs (4.8.13)
	Cash		Reacquisition Price (4.8.9)

		Debit	Credit
XX/XX/XX	Bonds Payable	700,000	
	Loss on Reacquisition	8,712	
	Discount on Bonds Payable$_{issue}$		23,712
	Cash		685,000

4.10 Troubled Debt Restructuring

Example 35: Troubled Debt Restructuring: 20X1
Installment Note Amount = $6,000.
Note Interest Rate = 10%.
Interest in arrears = $600.
New settlement payment = $1,100 for 7 years.
Record the troubled debt restructuring journal entry with the first $1,100 payment.

Solution 35:

1. **Debt Restructuring Carrying Amount (4.9.1)**
Debt Restructuring Carrying Amount = Debt Book Value +
Unpaid Accrued Interest
Debt Restructuring Carrying Amount = 6,000 + 600 = 6,600

2. **New Effective Interest Rate (4.9.2)**
Solve for New Effective Interest Rate:
Debt Restructuring Carrying Amount (4.9.1) =
pva(New Payment Amount, New Effective Interest Rate, New Number of Payments)
6,600 = pva(1,100, New Effective Interest Rate, 7)
New Effective Interest Rate = 0.04

3. **Troubled Debt Identification (4.9.3)**
   Since New Effective Interest Rate (4.9.2) of 0.04 < Original Effective Interest Rate of 0.10 then:
   The restructuring is a Troubled Debt Restructuring (4.9).

4. **Sum New Cash Outflows (4.9.4)**
   Let n = the number of new future cash outflows for debt payment.
   Sum New Cash Outflows = $\sum_{i=1}^{n}$ New Payment Amount$_i$
   Sum New Cash Outflows = 1,100 × 7 = 7,700

5. **Sum New Cash Outflows Is Higher Than Carry (4.9.6)**
   Since Sum New Cash Outflows (4.9.4) > Carrying Amount (4.9.1) then:

		Debit	Credit
XX/XX/XX	Interest Payable	Unpaid Accrued Interest	
	Payable$_{issue}$		Unpaid Accrued Interest

		Debit	Credit
20X1	Interest Payable	600	
	Payable$_{issue}$		600

Interest Expense Amount = Payable$_{issue}$ Credit Balance × New Effective Interest Rate (4.9.2)
Interest Expense Amount = 6,600 × 0.04 = 264
New Amortization Amount = New Payment Amount – Interest Expense Amount
New Amortization Amount = 1,100 – 264 = 836

		Debit	Credit
XX/XX/XX	Interest Expense	Interest Expense Amount	
	Payable$_{issue}$		New Amortization Amount
	Cash		New Payment Amount

		Debit	Credit
20X1	Interest Expense	264	
	Payable$_{issue}$		836
	Cash		1,100

Chapter 5

Shareholder's Equity Examples

5.1 Share Repurchase: Retirement Method

Example 36: Share Repurchase: Retirement Method
Common Stock at Par Balance = $100,000,000.
As of 6/1/X6, the firm had Issued and Outstanding 100,000,000 shares at $1 par.
Common Stock at Excess Balance = $900,000,000.
As of 6/1/X6, the firm had Issued and Outstanding 100,000,000 shares at $9 excess of par.
Share Repurchase Gains Balance = $2,000,000.
Retained Earnings Balance = $2,000,000,000.
On 6/1/X6, the firm repurchased 1,000,000 shares at $13 per share = $13,000,000.
Provide the Retirement Method buyback journal entry.
Solution 36:

1. **Common Stock Par Share Table (5.1.15)**

Date	Quantity Issued	Quantity Outstanding	Par Value Per Share
XX/XX/XX	100,000,000	100,000,000	$1

2. **Common Stock Additional Share Table (5.1.16)**

Date	Quantity Issued	Quantity Outstanding	Price Per Additional Share
XX/XX/XX	100,000,000	100,000,000	$9

3. **Retirement At Par Amount (5.3.1)**
   Retirement At Par Amount = Shares Purchased ×
   Common Stock Par Share Table (5.1.15) Par Value Per Share
   Retirement At Par Amount = 1,000,000 × 1 = 1,000,000

4. **Retirement At Excess Amount (5.3.2)**
   Retirement At Excess Amount = Shares Purchased ×
   Common Stock Additional Share Table (5.1.16) Price Per Additional Share
   Retirement At Excess Amount = 1,000,000 × 9 = 9,000,000

5. **Gain/(Loss) On Purchase (5.3.3)**
   Gain/(Loss) On Purchase = [Retirement At Par Amount (5.3.1) +
   Retirement At Excess Amount (5.3.2)] –
   Cash Paid
   Gain/(Loss) On Purchase = [1,000,000 + 9,000,000] – 13,000,000 = -3,000,000

6. **Retirement Retained Earnings Adjustment Amount (5.3.4)**
   Since Gain/(Loss) On Purchase (5.3.3) < 0 then:
   Retirement Retained Earnings Adjustment Amount = |Gain/(Loss) On Purchase| (5.3.3) –
   Share Repurchase Gains (5.1.17) Credit Balance
   Retirement Retained Earnings Adjustment Amount = |-3,000,000| – 2,000,000 = 1,000,000

7. **Share Repurchase Gains: Journal Entry (5.3.5)**
   Since Gain/(Loss) On Purchase (5.3.3) < 0 and Retained Earnings Adjustment Amount (5.3.4) > 0 then:

		Debit	Credit
XX/XX/XX	Common Stock at Par (5.1.3)	(5.3.1)	
	Common Stock—Additional Paid-in Capital (5.1.4)	(5.3.2)	
	Share Repurchase Gains (5.1.17)	(5.1.17) Credit Balance	
	Retained Earnings (5.1.18)	(5.3.4)	
	Cash		Cash Paid

		Debit	Credit
6/1/X6	Common Stock at Par	1,000,000	
	Common Stock—Additional Paid-in Capital	9,000,000	
	Share Repurchase Gains	2,000,000	
	Retained Earnings	1,000,000	
	Cash		13,000,000

8. **Common Stock Par Share Table (5.1.15)**

Date	Quantity Issued	Quantity Outstanding	Par Value Per Share
XX/XX/XX	100,000,000	~~100,000,000~~ 99,000,000	$1

9. **Common Stock Additional Share Table (5.1.16)**

Date	Quantity Issued	Quantity Outstanding	Price Per Additional Share
XX/XX/XX	100,000,000	~~100,000,000~~ 99,000,000	$9

5.2 Share Repurchase: Treasury Method

Example 37: Share Repurchase: Treasury Method
Common Stock at Par Balance = $100,000,000.
As of 6/1/X6, the firm had Issued and Outstanding 100,000,000 shares at $1 par.
Common Stock at Excess Balance = $900,000,000.
As of 6/1/X6, the firm had Issued and Outstanding 100,000,000 shares at $9 excess of par.
Share Repurchase Gains Balance = $2,000,000.
Retained Earnings Balance = $2,000,000,000.
On 6/1/X6, the firm repurchased 1,000,000 shares at $13 per share = $13,000,000.
On 7/1/X6, the firm resold 1,000,000 shares at $10 per share = $10,000,000.
Provide the Treasury Method buyback journal entry on 6/1/X6.
Provide the Treasury Method resale journal entry on 7/1/X6.
Solution 37:

1. **Common Stock Par Share Table (5.1.15)**

Date	Quantity Issued	Quantity Outstanding	Par Value Per Share
XX/XX/XX	100,000,000		$1

2. **Common Stock Additional Share Table (5.1.16)**

Date	Quantity Issued	Quantity Outstanding	Price Per Additional Share
XX/XX/XX	100,000,000		$9

3. **Share Repurchase Cost Per Share (5.4.2)**

$$\text{Share Repurchase Cost Per Share} = \frac{\text{Cash Paid}}{\text{Number of Shares Repurchased}}$$

$$\text{Share Repurchase Cost Per Share} = \frac{13{,}000{,}000}{1{,}000{,}000} = 13$$

4. **Share Repurchase Journal Entry (5.4.3)**

		Debit	Credit
XX/XX/XX	Treasury Stock (5.4.1)	Cash Paid	
	Cash		Cash Paid

		Debit	Credit
6/1/X6	Treasury Stock	13,000,000	
	Cash		13,000,000

5. **Treasury Stock Table (5.4.4)**

Date	Quantity Repurchased	Quantity Remaining	Cost Per Share
6/1/X6	1,000,000	1,000,000	13

6. **Treasury Resale: Cost Amount (5.4.6)**
   Treasury Resale: Cost Amount = Quantity Shares Sold × Treasury Table (5.4.4) Cost Per Share
   Treasury Resale: Cost Amount = 1,000,000 × 13 = 13,000,000

7. **Treasury Gain/(Loss) Amount (5.4.7)**
   Treasury Gain/(Loss) Amount = Cash Received – Treasury Resale: Cost Amount (5.4.6)
   Treasury Gain/(Loss) Amount = 10,000,000 – 13,000,000 = -3,000,000

8. **Treasury Retained Earnings Adjustment Amount (5.4.8)**
   Since Treasury Gain/(Loss) Amount (5.4.7) < 0 then:
   Treasury Retained Earnings Adjustment Amount = |Treasury Gain/(Loss) Amount| (5.4.7) – Share Repurchase Gains (5.1.17) Credit Balance
   Treasury Retained Earnings Adjustment Amount = |-3,000,000| – 2,000,000 = 1,000,000

9. **Treasury Resale: Journal Entry (5.4.9)**
   Since Gain/(Loss) Amount (5.4.7) < 0 and Retained Earnings Adjustment Amount (5.4.8) > 0 then:

		Debit	Credit
XX/XX/XX	Cash	Cash Received	
	Share Repurchase Gains (5.1.17)	(5.1.17) Credit Balance	
	Retained Earnings (5.1.18)	(5.4.8)	
	Treasury Stock (5.4.1)		(5.4.6)

		Debit	Credit
7/1/X6	Cash	10,000,000	
	Share Repurchase Gains	2,000,000	
	Retained Earnings	1,000,000	
	Treasury Stock		13,000,000

10. **Treasury Stock Table (5.4.4)**

Date	Quantity Repurchased	Quantity Remaining	Cost Per Share
6/1/X6	1,000,000	~~1,000,000~~ 0	13

5.3 Stock Appreciation Plan: Simple

Example 38: Stock Appreciation Plan For Louis Armstrong
Grant Date = 1/1/X4.
Grant Date Price Per Share = $10.
Plan Rights Quantity = 1,000.
Vesting Date = 12/31/X6.
Exercise Date = 6/30/X7.
Exercise Date Price Per Share = $18.
Right and Market Values are:

Date	Right Value	Market Value
12/31/20X4	$6.00	16.00
12/31/20X5	8.00	18.00
12/31/20X6	7.50	17.50
6/30/20X7	8.00	18.00

What is the compensation expense for 20X6?
What is the compensation expense for 20X7?
Solution 38:

1. **Service Period Years (5.17.3)**
   Service Period Years = Years between Grant Date and Vesting Date
   Service Period Years = 3

2. **Service Period Completed Percent (5.17.5): 12/31/X4**
   $$\text{Service Period Completed Percent} = \frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$$
   $$\text{Service Period Completed Percent} = \frac{1}{3}$$

3. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**
   Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
   Grant Date Price Per Share] ×
   Plan Rights Quantity$_{employee}$ (5.17.1) ×
   Service Period Completed Percent (5.17.5)
   Stock Appreciatin Plan Liability (Louis Armstrong) Balance = [16.00 – 10.00] × 1,000 × $\frac{1}{3}$ = 2,000

4. **Stock Appreciation Plan Expense Amount (5.17.7)**
   Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
   Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
   Stock Appreciation Plan Expense Amount = 2,000 – 0 = 2,000

5. **Stock Appreciation Expense Journal Entry (5.17.8)**
   Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X4	Compensation Expense	2,000	
	Stock Appreciation Plan Liability for Louis Armstrong		2,000

Ledger

Stock Appreciation Plan Liability for Louis Armstrong

	12/31/X4 2,000
	balance 2,000

6. **Service Period Completed Percent (5.17.5): 12/31/X5**
   Service Period Completed Percent = $\frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$
   Service Period Completed Percent = $\frac{2}{3}$

7. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**
   Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
   Grant Date Price Per Share] ×
   Plan Rights Quantity$_{employee}$ (5.17.1) ×
   Service Period Completed Percent (5.17.5)
   Stock Appreciatin Plan Liability (Louis Armstrong) Balance = [18.00 – 10.00] × 1,000 × $\frac{2}{3}$ = 5,333

8. **Stock Appreciation Plan Expense Amount (5.17.7)**
   Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
   Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
   Stock Appreciation Plan Expense Amount = 5,333 – 2,000 = 3,333

9. **Stock Appreciation Expense Journal Entry (5.17.8)**
   Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X5	Compensation Expense	3,333	
	Stock Appreciation Plan Liability for Louis Armstrong		3,333

Ledger

Stock Appreciation Plan Liability for Louis Armstrong

	12/31/X4 2,000
	12/31/X5 3,333
	balance 5,333

10. **Service Period Completed Percent (5.17.5): 12/31/X6**
    Service Period Completed Percent = $\frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$
    Service Period Completed Percent = $\frac{3}{3}$ = 1.0

11. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**
Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
Grant Date Price Per Share] ×
Plan Rights Quantity$_{employee}$ (5.17.1) ×
Service Period Completed Percent (5.17.5)
Stock Appreciatin Plan Liability (Louis Armstrong) Balance = [17.50 – 10.00] × 1,000 × 1.0 = 7,500

12. **Stock Appreciation Plan Expense Amount (5.17.7)**
Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
Stock Appreciation Plan Expense Amount = 7,500 – 5,333 = 2,167

Stock Appreciation Plan Expense for 20X6 = $2,167

13. **Stock Appreciation Expense Journal Entry (5.17.8)**
Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X6	Compensation Expense	2,167	
	Stock Appreciation Plan Liability for Louis Armstrong		2,167

Ledger

Stock Appreciation Plan Liability for Louis Armstrong

12/31/X4 2,000
12/31/X5 3,333
12/31/X6 2,167
balance 7,500

14. **Service Period Completed Percent (5.17.5): 6/30/X7**
$$\text{Service Period Completed Percent} = \frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$$
$$\text{Service Period Completed Percent} = \frac{3}{3} = 1.0$$

15. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**
Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
Grant Date Price Per Share] ×
Plan Rights Quantity$_{employee}$ (5.17.1) ×
Service Period Completed Percent (5.17.5)
Stock Appreciatin Plan Liability (Louis Armstrong) Balance = [18.00 – 10.00] × 1,000 × 1.0 = 8,000

16. **Stock Appreciation Plan Expense Amount (5.17.7)**
Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
Stock Appreciation Plan Expense Amount = 8,000 – 7,500 = 500

Stock Appreciation Plan Expense for 20X7 = $500

17. **Stock Appreciation Expense Journal Entry (5.17.8)**
Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X7	Compensation Expense	500	
	Stock Appreciation Plan Liability for Louis Armstrong		500

Ledger

Stock Appreciation Plan Liability for Louis Armstrong

	12/31/X4 2,000
	12/31/X5 3,333
	12/31/X6 2,167
	6/30/X7 500
	balance 8,000

5.4 Stock Appreciation Plan: Comprehensive

Example 39: Stock Appreciation Plan For Jimmy Stewart
Grant Date = 1/1/X1.
Grant Date Price Per Share = $10.
Plan Rights Quantity = 5,000.
Vesting Date = 12/31/X4.
Expiration Date = 12/31/X6.
Exercise Date = 12/31/X4.
Year End Market Prices are:

20X1	$11.00
20X2	13.50
20X3	12.00
20X4	14.00

Prepare all of the journal entries.
Solution 39:

1. **Service Period Years (5.17.3)**
   Service Period Years = Years between Grant Date and Vesting Date
   Service Period Years = 4

2. **Service Period Completed Percent (5.17.5): 12/31/X1**
   $$\text{Service Period Completed Percent} = \frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$$
   $$\text{Service Period Completed Percent} = \frac{1}{4} = 0.25$$

3. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**
   Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share – Grant Date Price Per Share] × Plan Rights Quantity$_{employee}$ (5.17.1) × Service Period Completed Percent (5.17.5)
   Stock Appreciatin Plan Liability (Jimmy Stewart) Balance = [11.00 – 10.00] × 5,000 × 0.25 = 1,250

4. **Stock Appreciation Plan Expense Amount (5.17.7)**
   Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) – Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
   Stock Appreciation Plan Expense Amount = 1,250 – 0 = 1,250

5. **Stock Appreciation Expense Journal Entry (5.17.8)**
   Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X1	Compensation Expense	1,250	
	Stock Appreciation Plan Liability for Jimmy Stewart		1,250

Ledger

Stock Appreciation Plan Liability for Jimmy Stewart

	12/31/X1 1,250
	balance 1,250

6. **Service Period Completed Percent (5.17.5): 12/31/X2**

$$\text{Service Period Completed Percent} = \frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$$

$$\text{Service Period Completed Percent} = \frac{2}{4} = 0.50$$

7. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**

Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
Grant Date Price Per Share] ×
Plan Rights Quantity$_{employee}$ (5.17.1) ×
Service Period Completed Percent (5.17.5)

Stock Appreciatin Plan Liability (Jimmy Stewart) Balance = [13.50 – 10.00] × 5,000 × 0.50 = 8,750

8. **Stock Appreciation Plan Expense Amount (5.17.7)**

Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance

Stock Appreciation Plan Expense Amount = 8,750 – 1,250 = 7,500

9. **Stock Appreciation Expense Journal Entry (5.17.8)**
Since Stock Appreciation Plan Expense Amount (5.17.7) > 0 then:

		Debit	Credit
12/31/XX	Compensation Expense	(5.17.7)	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)		(5.17.7)

		Debit	Credit
12/31/X2	Compensation Expense	7,500	
	Stock Appreciation Plan Liability for Jimmy Stewart		7,500

Ledger

Stock Appreciation Plan Liability for Jimmy Stewart

12/31/X1 1,250
12/31/X2 7,500
balance 8,750

10. **Service Period Completed Percent (5.17.5): 12/31/X3**

$$\text{Service Period Completed Percent} = \frac{\text{Years Participation Before Vesting Date}}{\text{Service Period Years (5.17.3)}}$$

$$\text{Service Period Completed Percent} = \frac{3}{4} = 0.75$$

11. **Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6)**

Stock Appreciatin Plan Liability$_{employee}$ Balance = [Current Price Per Share –
Grant Date Price Per Share] ×
Plan Rights Quantity$_{employee}$ (5.17.1) ×
Service Period Completed Percent (5.17.5)

Stock Appreciatin Plan Liability (Jimmy Stewart) Balance = [12.00 – 10.00] × 5,000 × 0.75 = 7,500

12. **Stock Appreciation Plan Expense Amount (5.17.7)**

Stock Appreciation Plan Expense Amount = Stock Appreciation Plan Liability$_{employee}$ Balance (5.17.6) –
Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance

Stock Appreciation Plan Expense Amount = 7,500 – 8,750 = -1,250

13. **Stock Appreciation Expense Journal Entry (5.17.8)**
Since Stock Appreciation Plan Expense Amount (5.17.7) < 0 then:

		Debit	Credit
12/31/XX	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)	(5.17.7)	
	Compensation Expense		(5.17.7)

		Debit	Credit
12/31/X3	Stock Appreciation Plan Liability for Jimmy Stewart	1,250	
	Compensation Expense		1,250

Ledger

Stock Appreciation Plan Liability for Jimmy Stewart

	12/31/X1 1,250
	12/31/X2 7,500
12/31/X3 1,250	
	balance 7,500

14. **Benefit To Employee (5.17.2): 12/31/X4**
    Benefit To Employee = [Exercise Date Price Per Share – Grant Date Price Per Share] × Plan Rights Quantity$_{employee}$ (5.17.1)
    Benefit To Employee = [14.00 – 10.00] × 5,000 = 20,000

15. **Employee Exercises Rights (5.17.9): 12/31/X4**
    Expense Amount = Benefit To Employee (5.17.2) – Stock Appreciation Plan Liability$_{employee}$ (5.17.4) Credit Balance
    Expense Amount = 20,000 – 7,500 = 12,500
    Since Expense Amount > 0 then:

		Debit	Credit
XX/XX/XX	Compensation Expense	Expense Amount	
	Stock Appreciation Plan Liability$_{employee}$ (5.17.4)	(5.17.4) Credit Balance	
	Cash		(5.17.2)

		Debit	Credit
12/31/X4	Compensation Expense	12,500	
	Stock Appreciation Plan Liability for Jimmy Stewart	7,500	
	Cash		20,000

Ledger

Stock Appreciation Plan Liability for Jimmy Stewart

	12/31/X1 1,250
	12/31/X2 7,500
12/31/X3 1,250	
12/31/X4 7,500	
	balance 0

5.5 Basic and Diluted Earnings Per Share

Example 40: Basic Earnings Per Share and Diluted Earnings Per Share
Net Income = $80,000.
Weighted-Average Common Shares Outstanding = 22,000.
Preferred Shares Outstanding = 3,000.
Preferred Shares Dividend Rate = 5%.
Preferred Shares Par Value = $100.
Each Preferred Share Converts To Common = 5.
Preferred Dividends were declared.

What is the Basic Earnings Per Share?
What is the Diluted Earnings Per Share?

Solution 40:

1. **Preferred Dividends Declared (5.10.1)**
   Preferred Dividends = Preferred Shares Outstanding × Preferred Shares Dividend Rate × Preferred Shares Par Value
   Preferred Dividends = 3,000 × 0.05 × 100 = 15,000

2. **EPS Preferred Dividends (5.10.2)**
   Since Preferred Dividends are not Cumulative then:
   EPS Preferred Dividends = Preferred Dividends Declared (5.10.1)
   EPS Preferred Dividends = 15,000

3. **Basic Earnings Per Share (5.10.5)**

$$\text{Basic Earnings Per Share} = \frac{\text{Net Income} - \text{EPS Preferred Dividends (5.10.2)}}{\text{Weighted-Average Common Shares Outstanding (5.10.3)}}$$

$$\text{Basic Earnings Per Share} = \frac{18{,}000 - 15{,}000}{20{,}000} = \$3.25$$

Basic Earnings Per Share = $3.25.

4. **Diluted Earnings Per Share (5.12.1)**

$$\text{Diluted Earnings Per Share} = \frac{\text{Net Income}}{\text{Weighted-Average Outstanding (5.10.3)} + \{\text{Converted Common Shares} \times [1 + \text{Non-Asset Distribution (5.6)}]\}}$$

$$\text{Diluted Earnings Per Share} = \frac{80{,}000}{20{,}000 + \{(3{,}000 \times 5) \times [1 + 0]\}} = \$2.29$$

Diluted Earnings Per Share = $2.29.

5.6 Basic Earnings Per Share: Fluctuating Outstanding

Example 41: Basic Earnings Per Share: Fluctuating Outstanding
Net Income = $154,000,000.
Preferred Dividends Declared = $4,000,000.
Capital Structure for Common Stock:

Jan. 1	Common shares outstanding = 60 million
Mar. 1	New shares sold = 12 million
Jun. 17	Stock dividend distributed = 10%
Oct. 1	Repurchase treasury shares = 8 million

What is the Basic Earnings Per Share?

Solution 41:

1. **Weighted-Average Common Shares Outstanding Table (5.10.4): Jan. 1 – Feb. 28**

Month Range	Shares Outstanding (1)	Non-Asset Distribution Multiplier (2)	Fraction of Year (3)	Weighted Shares (1) × (2) × (3)
			$\sum_{i=1}^{n} = \frac{12}{12}$	$\sum_{i=1}^{n} = \text{WACSO}$

Month Range	Shares Outstanding (1)	Non-Asset Distribution Multiplier (2)	Fraction of Year (3)	Weighted Shares (1) × (2) × (3)
Jan. 1 – Feb. 28	60,000,000	1.1	$\frac{2}{12}$	11,000,000

The Non-Asset Distribute Multiplier is 1.1 because a 10% stock dividend occurred subsequently.

2. **Weighted-Average Common Shares Outstanding Table (5.10.4): Mar. 1 – Jun. 16**

Month Range	Shares Outstanding (1)	Non-Asset Distribution Multiplier (2)	Fraction of Year (3)	Weighted Shares (1) × (2) × (3)
Jan. 1 – Feb. 28	60,000,000	1.1	$\frac{2}{12}$	11,000,000
Mar. 1 – Jun. 16	72,000,000	1.1	$\frac{3.5}{12}$	23,100,000

The new shares issued increased the Outstanding Shares to 72,000,000 for 3.5 months. The Non-Asset Distribute Multiplier is 1.1 because a 10% stock dividend occurred subsequently.

3. **Weighted-Average Common Shares Outstanding Table (5.10.4): Jun. 17 – Sept. 30**

Month Range	Shares Outstanding (1)	Non-Asset Distribution Multiplier (2)	Fraction of Year (3)	Weighted Shares (1) × (2) × (3)
Jan. 1 – Feb. 28	60,000,000	1.1	$\frac{2}{12}$	11,000,000
Mar. 1 – Jun. 16	72,000,000	1.1	$\frac{3.5}{12}$	23,100,000
Jun. 17 – Sep. 30	79,200,000	1.0	$\frac{3.5}{12}$	23,100,000

A 10% stock dividend increased the Outstanding Shares by 7,200,000 for 3.5 months.

4. **Weighted-Average Common Shares Outstanding Table (5.10.4): Oct. 1 – Dec. 31**

Month Range	Shares Outstanding (1)	Non-Asset Distribution Multiplier (2)	Fraction of Year (3)	Weighted Shares (1) × (2) × (3)
Jan. 1 – Feb. 28	60,000,000	1.1	$\frac{2}{12}$	11,000,000
Mar. 1 – Jun. 16	72,000,000	1.1	$\frac{3.5}{12}$	23,100,000
Jun. 17 – Sep. 30	79,200,000	1.0	$\frac{3.5}{12}$	23,100,000
Oct. 1 – Dec. 31	71,200,000	1.0	$\frac{3}{12}$	17,800,000
Sum			$\frac{12}{12}$	75,000,000

Purchasing 8,000,000 of treasury shares increase the Outstanding Shares to 71,200,000 for the final three months of the year. The Weighted-Average Common Shares Outstanding is therefore 75,000,000 shares.

5. **Weighted-Average Common Shares Outstanding (5.10.3)**
   Let n = the number of month ranges where Shares Outstanding (5.1.1) was consistent.
   Weighted-Average Common Shares Outstanding =
   $$\sum_{i=1}^{n} \{\text{Shares Outstanding} \times [1 + \text{Non-Asset Distribution (5.6) occuring subsequently}]\}_i \times \frac{\text{Months During Period}_i}{12}$$
   Weighted-Average Common Shares Outstanding = 75,000,000

6. **Basic Earnings Per Share (5.10.5)**
   $$\text{Basic Earnings Per Share} = \frac{\text{Net Income – EPS Preferred Dividends (5.10.2)}}{\text{Weighted-Average Common Shares Outstanding (5.10.3)}}$$
   $$\text{Basic Earnings Per Share} = \frac{154{,}000{,}000 - 4{,}000{,}000}{75{,}000{,}000} = \$2.00$$

5.7 Interim Financial Statements

Example 42: Interim Financial Statements
Given the following trial balance:

Account	Debit	Credit
Sales		10,830
Cost of Goods Sold	5,890	
Selling Expenses	1,370	
General Expenses	2,850	
Ordinary Loss	30	
Preacquisition Earnings	90	
Cash	1,500	
Accounts Receivable	2,250	
Inventory	5,600	
Other Current Assets	1,850	
PP&E	15,500	
Patent	1,200	
Other Non-Current Assets	3,600	
Current Liabilities (including Dividends Payable)		10,160
Long-term Note		1,000
Bonds @ 7% (net)		3,845
Bonds @ 8% (net)		1,395
Common @ Par		6,000
Additional Paid-in Capital		6,500
Retained Earnings		2,300
Dividends Declared	300	
	42,030	42,030

Prepare the Statement Trial Balance.
Solution 42:

1. **Pro-forma Net Income (5.18.1)**
   $$\begin{aligned}\text{Pro-forma Net Income} = &+ \sum_{i=1}^{n} \text{Net Revenue}_i \text{ Credit Balance} \\ &- \sum_{i=1}^{n} \text{Expense}_i \text{ Debit Balance} \\ &+ \sum_{i=1}^{n} \text{Gain}_i \text{ Credit Balance} \\ &- \sum_{i=1}^{n} \text{Loss}_i \text{ Debit Balance} \\ &- \text{Preacquisition Earnings (8.2.5) Debit Balance}\end{aligned}$$

Account	Debit	Credit	Statement
Sales		10,830	
Cost of Goods Sold	5,890		
Selling Expenses	1,370		
General Expenses	2,850		
Ordinary Loss	30		
Preacquisition Earnings	90		
Pro-forma Net Income			600 (5.18.1) (1)

2. **Book Value Equity (5.18.2)**

Book Value Equity = $\sum_{i=1}^{n}$ Equity$_i$ Credit Balance

Account	Debit	Credit	Statement
Common @ Par		6,000	
Additional Paid-in Capital		6,500	
Retained Earnings		2,300	
Book Value Equity			14,800 (5.18.2) (6)

3. **Current Equity (5.18.3)**

Current Equity =	+ Book Value Equity (5.18.2)	14,800
	+ Pro-forma Net Income (5.18.1)	600
	– Dividends Declared Debit Balance	300
	+ Non-Controlling Interest (8.2.2)	0
Current Equity =		15,100

4. **Current Retained Earnings (5.18.4)**

Current Retained Earnings =	+ Pro-forma Net Income (5.18.1)	600
	+ Retained Earnings Credit Balance	2,300
	– Dividends Declared Debit Balance	300
Current Retained Earnings =		2,600

5. **Statement Trial Balance (5.18.5) Template**

Account	Debit	Credit	Statement
Net Revenue$_1$		Amount$_1$	
...			
Expense$_1$	Amount$_1$		
...			
Gain$_1$		Amount$_1$	
...			
Loss$_1$	Amount$_1$		
...			
Preacquisition Earnings (8.2.5)	Amount		
Pro-forma Net Income			(5.18.1) (1)
Retained Earnings			Credit Balance (2)
Dividends Declared	Amount (3)		
Current Retained Earnings			(1) + (2) – (3) = (5.18.4)
Net Asset$_1$	Amount$_1$		
...			
Total Assets			$\sum_{i=1}^{n}$ Asset$_i$ (4)
Net Liability$_1$		Amount$_1$	
...			
Total Liabilities			$\sum_{i=1}^{n}$ Liability$_i$ (5)
Equity$_1$		Amount$_1$	
...			
Book Value Equity			(5.18.2) (6)
Pro-form Net Income			(5.18.1) (1)
Dividends Declared			-Debit Balance (3)
Non-Controlling Interest (8.2.2)		Amount (7)	
Current Equity			(6) + (1) – (3) + (7) = (5.18.3)
			(4) = (5) + (5.18.3)
	$\sum$	$\sum$	

6. **Statement Trial Balance (5.18.5) Presentation**

Account	Debit	Credit	Statement
Sales		10,830	
Cost of Goods Sold	5,890		
Selling Expenses	1,370		
General Expenses	2,850		
Ordinary Loss	30		
Preacquisition Earnings	90		
Pro-forma Net Income			600
Retained Earnings			2,300
Dividends Declared	300		
Current Retained Earnings			2,600
Cash	1,500		
Accounts Receivable	2,250		
Inventory	5,600		
Other Current Assets	1,850		
PP&E	15,500		
Patent	1,200		
Other Non-current Assets	3,600		
Total Assets			31,500
Current Liabilities (including Dividends Payable)		10,160	
Long-term Note		1,000	
Bonds @ 7% (net)		3,845	
Bonds @ 8% (net)		1,395	
Total Liabilities			16,400
Common @ Par		6,000	
Additional Paid-in Capital		6,500	
Retained Earnings		2,300	
Book Value Equity			14,800
Pro-form Net Income			600
Dividends Declared			-300
Current Equity			15,100
	42,030	42,030	

Chapter 6

Statement of Cash Flows Examples

6.1 Indirect Method Presentation: Simple

Example 43, 20X3:
Net Income = 34,000.
Cash Beginning Balance = 0.
Cash Ending Balance = 49,000.
Accounts Receivable Beginning Balance = 0.
Accounts Receivable Ending Balance = 36,000.
Accounts Payable Beginning Balance = 0.
Accounts Payable Ending Balance = 5,000.
Common Stock Beginning Balance = 0.
Common Stock Ending Balance = 60,000.
Cash Dividends Paid = 14,000.

Prepare the Statement of Cash Flows using the Indirect Method.

Solution 43:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance – Cash Beginning Balance
   Change In Cash = 49,000 – 0 = 49,000

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance – Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 36,000 – 0 = 36,000

3. **Change In Accounts Payable (6.2.13)**
   Change In Accounts Payable = Accounts Payable Ending Balance – Accounts Payable Beginning Balance
   Change In Accounts Payable = 5,000 – 0 = 5,000

4. **Cash Provided By Operating Activities (6.3.13)**
   Cash Provided By Operating Activities = Net Income
   – Change In Accounts Receivable (6.2.1)
   + Change In Accounts Payable (6.2.13)
   Cash Provided By Operating Activities = 34,000
   – 36,000
   + 5,000
   = 3,000

5. **Financing Cash Flows (6.5)**
   Cash Financing Activity = Equity, Loan, or Bond Ending Balance – Equity, Loan, or Bond Beginning Balance

Issuance of Common Stock = Common Stock Ending Balance – Common Stock Beginning Balance
Issuance of Common Stock = 60,000 – 0 = 60,000

6. **Cash Provided By Financing Activities (6.5.2)**
   Cash Provided By Financing Activities = + Issuance of Common Stock – Cash Dividends Paid
   Cash Provided By Financing Activities = 60,000 – 14,000 = 46,000

7. **Net Increase In Cash (6.5.3)**
   Net Increase In Cash =
   + Cash Provided By Operating Activities (6.3.13)
   + Cash Provided By Investing Activities (6.4.3)
   + Cash Provided By Financing Activities (6.5.2)
   = Change In Cash (6.1)
   Net Increase In Cash =
   + 3,000
   + 0
   + 46,000
   = 49,000

8. **Statement of Cash Flows (6.6)**

Cash flows from operating activities				
Net Income	34,000			
Increase in accounts receivable	(36,000)	(6.2.1)		
Increase in accounts payable	5,000	(6.2.13)		
Net cash provided by operating activities			3,000	(6.3.13)
Cash flows from financing activities				
Issuance of common stock	60,000	Given		
Cash dividends paid	(14,000)	Given		
Net cash provided by financing activities			46,000	(6.5.2)
Net increase in cash			49,000	(6.5.3) or (6.1)
Cash, Beginning Balance			0	
Cash, Ending Balance			49,000	

6.2 Indirect Method Presentation: Complex

Example 44, 20X4:
Net Income = 134,000.
Cash Beginning Balance = 49,000.
Cash Ending Balance = 37,000.
Accounts Receivable Beginning Balance = 36,000.
Accounts Receivable Ending Balance = 26,000.
Prepaid Expenses Beginning Balance = 0.
Prepaid Expenses Ending Balance = 6,000.
Accounts Payable Beginning Balance = 5,000.
Accounts Payable Ending Balance = 40,000.
Depreciation Expense = 21,000.
Land Beginning Balance = 0.
Land Ending Balance = 70,000.
Building Beginning Balance = 0.
Building Ending Balance = 200,000.
Equipment Beginning Balance = 0.
Equipment Ending Balance = 68,000.

Bonds Payable Beginning Balance = 0.
Bonds Payable Ending Balance = 150,000.
Cash Dividends Paid = 18,000.

Prepare the Statement of Cash Flows using the Indirect Method.

Solution 44:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance – Cash Beginning Balance
   Change In Cash = 37,000 – 49,000 = -12,000

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance – Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 26,000 – 36,000 = -10,000

3. **Change In Prepaid Expenses (6.2.6)**
   Change In Prepaid Expenses = Prepaid Expenses Ending Balance – Prepaid Expenses Beginning Balance
   Change In Prepaid Expenses = 6,000 – 0 = 6,000

4. **Change In Accounts Payable (6.2.13)**
   Change In Accounts Payable = Accounts Payable Ending Balance – Accounts Payable Beginning Balance
   Change In Prepaid Expenses = 40,000 – 5,000 = 35,000

5. **Cash Provided By Operating Activities (6.3.13)**
   Cash Provided By Operating Activities = Net Income
   – Change In Accounts Receivable (6.2.1)
   – Change In Prepaid Expenses (6.2.6)
   + Depreciation Expense (6.3.11)
   + Change In Accounts Payable (6.2.13)
   Cash Provided By Operating Activities = 134,000
   – -10,000
   – 6,000
   + 21,000
   + 35,000
   = 194,000

6. **Investing Cash Flows (6.4)**
   Cash Investing Activity = Property, Plant, or Equipment Ending Balance – Property, Plant, or Equipment Beginning Balance
   Cash Portion of Purchase of Property (Land) = Land Ending Balance – Land Beginning Balance
   Cash Portion of Purchase of Property (Land) = 70,000 – 0 = 70,000

7. **Investing Cash Flows (6.4)**
   Cash Investing Activity = Property, Plant, or Equipment Ending Balance – Property, Plant, or Equipment Beginning Balance
   Cash Portion of Purchase of Plant (Building) = Building Ending Balance – Building Beginning Balance
   Cash Portion of Purchase of Plant (Building) = 200,000 – 0 = 200,000

8. **Investing Cash Flows (6.4)**
   Cash Investing Activity = Property, Plant, or Equipment Ending Balance – Property, Plant, or Equipment Beginning Balance
   Cash Portion of Purchase of Equipment = Equipment Ending Balance – Equipment Beginning Balance
   Cash Portion of Purchase of Equipment = 68,000 – 0 = 68,000

9. **Cash Provided By Investing Activities (6.4.3)**
   Cash Provided By Investing Activities = – Cash Portion of Purchase of Property (Land)
   – Cash Portion of Purchase of Plant (Building)
   – Cash Portion of Purchase of Equipment
   Cash Provided By Investing Activities = – 70,000 – 200,000 – 68,000 = -338,000

10. **Financing Cash Flows (6.5)**
    Cash Financing Activity = Equity, Loan, or Bond Ending Balance –
    Equity, Loan, or Bond Beginning Balance
    Issuance of Bonds = Bonds Payable Ending Balance –
    Bonds Payable Beginning Balance
    Issuance of Bonds = 150,000 – 0 = 150,000

11. **Cash Provided By Financing Activities (6.5.2)**
    Cash Provided By Financing Activities = + Issuance of Bonds
    – Cash Dividends Paid
    Cash Provided By Financing Activities = 150,000 – 18,000 = 132,000

12. **Net Increase In Cash (6.5.3)**
    Net Increase In Cash =
    + Cash Provided By Operating Activities (6.3.13)
    + Cash Provided By Investing Activities (6.4.3)
    + Cash Provided By Financing Activities (6.5.2)
    = Change In Cash (6.1)
    Net Increase In Cash = 194,000 + -338,000 + 132,000 = -12,000

13. **Statement of Cash Flows (6.6)**

Cash flows from operating activities				
Net Income	134,000			
Increase in accounts receivable	(10,000)	(6.2.1)		
Increase in prepaid expenses	(6,000)	(6.2.6)		
Depreciation expense	21,000	(6.3.11)		
(add)Increase in accounts payable	35,000	(6.2.13)		
Net cash provided by operating activities			194,000	(6.3.13)
Cash flows from investing activities				
Cash outflow of purchase of land	(70,000)			
Cash outflow of purchase of building	(200,000)			
Cash outflow of purchase of equipment	(68,000)			
Net cash provided by investing activities			(338,000)	(6.4.3)
Cash flows from financing activities				
Issuance of bonds	150,000			
Cash dividends paid	(18,000)			
Net cash provided by financing activities			132,000	(6.5.2)
Net increase in cash			(12,000)	(6.5.3) or (6.1)
Cash, Beginning Balance			49,000	
Cash, Ending Balance			37,000	

6.3 Indirect Method Presentation: Complex

Example 45, 20X5:
Net Income = 125,000.

Cash Beginning Balance = 37,000.
Cash Ending Balance = 54,000.
Accounts Receivable Beginning Balance = 26,000.
Accounts Receivable Ending Balance = 68,000.
Inventory Beginning Balance = 0.
Inventory Ending Balance = 54,000.
Prepaid Expenses Beginning Balance = 6,000.
Prepaid Expenses Ending Balance = 4,000.
Accounts Payable Beginning Balance = 40,000.
Accounts Payable Ending Balance = 33,000.
Bonds Payable Beginning Balance = 150,000.
Bonds Payable Ending Balance = 110,000.
Depreciation Expense = 33,000.
Prepaid Expense Amortization = 2,000.
Land Beginning Balance = 70,000.
Land Ending Balance = 45,000.
Equipment Beginning Balance = 68,000.
Equipment Ending Balance = 193,000.
Building Beginning Balance = 200,000.
Building Ending Balance = 200,000.
Bonds Payable Beginning Balance = 0.
Bonds Payable Ending Balance = 150,000.
Common Stock Beginning Balance = 60,000.
Common Stock Ending Balance = 220,000.
Land was sold at book value for cash.
Cash Dividends Paid = 55,000.
Cash paid for interest on bonds = 12,000.
Cash paid for equipment = 166,000.
Cash received for sale of equipment = 34,000.
Equipment sold had cost of = 41,000.
Equipment sold had book value of = 36,000.

Prepare the Statement of Cash Flows using the Indirect Method.

Solution 45:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance – Cash Beginning Balance
   Change In Cash = 54,000 – 37,000 = 17,000

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance – Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 68,000 – 26,000 = 42,000

3. **Change In Inventory (6.2.5)**
   Change In Inventory = Inventory Ending Balance – Inventory Beginning Balance
   Change In Inventory = 54,000 – 0 = 54,000

4. **Change In Prepaid Expenses (6.2.6)**
   Change In Prepaid Expenses = Prepaid Expenses Ending Balance – Prepaid Expenses Beginning Balance
   Change In Prepaid Expenses = 4,000 – 6,000 = -2,000

5. **Change In Accounts Payable (6.2.13)**
   Change In Accounts Payable = Accounts Payable Ending Balance – Accounts Payable Beginning Balance
   Change In Accounts Payable = 33,000 – 40,000 = -7,000

6. **Gain or (Loss) on PP&E Sale (6.3.10)**
   Gain or (Loss) on PP&E Sale = Cash Received – Book Value
   Gain or (Loss) on PP&E Sale = 34,000 – 36,000 = -2,000

7. **Cash Provided By Operating Activities (6.3.13)**
   Cash Provided By Operating Activities = Net Income
   – Change In Accounts Receivable (6.2.1)
   – Change In Inventory (6.2.5)
   – Change In Prepaid Expenses (6.2.6)
   – Gain or (Loss) on PP&E Sale (6.3.10)
   + Depreciation Expense (6.3.11)
   + Change In Accounts Payable (6.2.13)

Cash Provided By Operating Activities =	125,000	Net Income
–	42,000	(6.2.1)
–	54,000	(6.2.5)
–	-2,000	(6.2.6)
–	-2,000	(6.3.10)
+	33,000	(6.3.11)
+	-7,000	(6.2.13)
=	59,000	

8. **Investing Cash Flows (6.4)**
   Cash Investing Activity = Property, Plant, or Equipment Ending Balance –
   Property, Plant, or Equipment Beginning Balance
   Cash Portion of Purchase of Property (Land) = Land Ending Balance –
   Land Beginning Balance
   Cash Portion of Sale of Property (Land) = 45,000 – 70,000 = -25,000

   Note: Cash inflows will have a negative balance.

9. **Cash Provided By Investing Activities (6.4.3)**
   Cash Provided By Investing Activities = + Cash Portion of Sale of Property (Land)
   + Cash Portion of Sale of Equipment
   – Cash Portion of Purchase of Equipment
   Cash Provided By Investing Activities = 25,000 + 34,000 – 166,000 = -107,000

10. **Financing Cash Flows (6.5)**
    Cash Financing Activity = Equity, Loan, or Bond Ending Balance –
    Equity, Loan, or Bond Beginning Balance
    Issuance of Common Stock = Common Stock Ending Balance –
    Common Stock Beginning Balance
    Issuance of Common Stock = 220,000 – 60,000 = 160,000

11. **Financing Cash Flows (6.5)**
    Cash Financing Activity = Equity, Loan, or Bond Ending Balance –
    Equity, Loan, or Bond Beginning Balance
    Redemption of Bonds = Bonds Payable Ending Balance –
    Bonds Payable Beginning Balance
    Redemption of Bonds = 110,000 – 150,000 = -40,000

12. **Cash Provided By Financing Activities (6.5.2)**
    Cash Provided By Financing Activities = + Issuance of Common Stock
    – Redemption of Bonds
    – Cash Dividends Paid
    Cash Provided By Financing Activities = 160,000 – 40,000 – 55,000 = 65,000

13. **Net Increase In Cash (6.5.3)**
    Net Increase In Cash =
    + Cash Provided By Operating Activities (6.3.13)
    + Cash Provided By Investing Activities (6.4.3)
    + Cash Provided By Financing Activities (6.5.2)
    = Change In Cash (6.1)

Net Increase In Cash = 59,000 + -107,000 + 65,000 = 17,000

14. **Statement of Cash Flows (6.6)**

Cash flows from operating activities				
Net Income	125,000			
Increase in accounts receivable	(42,000)	(6.2.1)		
Increase in inventory	(54,000)	(6.2.5)		
Decease in prepaid expenses	2,000	(6.2.6)		
Depreciation expense	33,000	(6.3.11)		
Decrease in accounts payable	(7,000)	(6.2.13)		
Loss on PP&E sale	2,000	(6.3.10)		
Net cash provided by operating activities			59,000	(6.3.13)
Cash flows from investing activities				
Cash inflow of sale of land	25,000	(6.4)		
Cash inflow of sale of equipment	34,000	Given		
Cash outflow of purchase of equipment	(166,000)	Given		
Net cash provided by investing activities			(107,000)	(6.4.3)
Cash flows from financing activities				
Issuance of common stock	160,000	Given		
Redemption of bonds	(40,000)	Given		
Cash dividends paid	(55,000)	Given		
Net cash provided by financing activities			65,000	(6.5.2)
Net increase in cash			17,000	(6.5.3) or (6.1)
Cash, Beginning Balance			37,000	
Cash, Ending Balance			54,000	

6.4 Direct Method Presentation: Complex

Example 46, 20X3:
Sales Revenues = 780,000.
Cost of Goods Sold = 450,000.
Operating Expenses = 160,000.
Depreciation Expense = 10,000.
Income Tax Expense = 48,000.
Cash Beginning Balance = 0.
Cash Ending Balance = 159,000.
Accounts Receivable Beginning Balance = 0.
Accounts Receivable Ending Balance = 15,000.
Inventory Beginning Balance = 0.
Inventory Ending Balance = 160,000.
Prepaid Expenses Beginning Balance = 0.
Prepaid Expenses Ending Balance = 8,000.
Property, Plant, and Equipment Beginning Balance = 0.
Property, Plant, and Equipment Ending Balance = 90,000.
Accounts Payable Beginning Balance = 0.
Accounts Payable Ending Balance = 60,000.
Accrued Expenses Payable Beginning Balance = 0.
Accrued Expenses Payable Ending Balance = 20,000.
Net Income = 112,000.

Prepare the Operating Section of the Statement of Cash Flows using the Direct Method.
Prepare the Reconciliation of Operating Activities.
Solution 46:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance –
   Cash Beginning Balance
   Change In Cash = 159,000 – 0 = 159.000

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance –
   Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 15,000 – 0 = 15,000

3. **Change In Inventory (6.2.5)**
   Change In Inventory = Inventory Ending Balance –
   Inventory Beginning Balance
   Change In Inventory = 160,000 – 0 = 160,000

4. **Change In Prepaid Expenses (6.2.6)**
   Change In Prepaid Expenses = Prepaid Expenses Ending Balance –
   Prepaid Expenses Beginning Balance
   Change In Prepaid Expenses = 8,000 – 0 = 8,000

5. **Change In Accrued Expenses Payable (6.2.10)**
   Change In Accrued Expenses Payable = Accrued Expenses Payable Ending Balance –
   Accrued Expenses Payable Beginning Balance
   Change In Accrued Expenses Payable = 20,000 – 0 = 20,000

6. **Change In Accounts Payable (6.2.13)**
   Change In Accounts Payable = Accounts Payable Ending Balance –
   Accounts Payable Beginning Balance
   Change In Accounts Payable = 60,000 – 0 = 60,000

7. **Change In Taxes Payable (6.2.15)**
   Change In Taxes Payable = Taxes Payable Ending Balance –
   Taxes Payable Beginning Balance
   Change In Taxes Payable = 0 – 0 = 0

8. **Cash Received From Customers (6.3.1)**
   Cash Received From Customers = Sales Revenues –
   Change In Accounts Receivable (6.2.1)
   Cash Received From Customers = 780,000 – 15,000 = 765,000

9. **Cash Paid To Suppliers (6.3.6)**
   Cash Paid To Suppliers = Costs Of Goods Sold +
   Change In Inventory (6.2.5) –
   Change In Accounts Payable (6.2.13)
   Cash Paid To Suppliers = 450,000 + 160,000 – 60,000 = 550,000

10. **Cash Paid For Operations (6.3.7)**
    Cash Paid For Operations = Operating Expenses +
    Change In Prepaid Expenses (6.2.6) –
    Change In Accrued Expenses Payable (6.2.10)
    Cash Paid For Operations = 160,000 + 8,000 – 20,000 = 148,000

11. **Cash Paid For Taxes (6.3.8)**
    Cash Paid For Taxes = Taxes Expense –
    Change In Taxes Payable (6.2.15)
    Cash Paid For Taxes = 48,000 – 0 = 48,000

12. **Cash Provided By Operating Activities: Direct Method (6.3.12)**

Cash Provided By Operating Activities = + Cash Received From Customers (6.3.1)
+ Cash Received From Interest and Dividends (6.3.2)
– Cash Paid To Suppliers (6.3.6)
– Cash Paid For Operations (6.3.7)
– Cash Paid For Taxes (6.3.8)

Cash Provided By Operating Activities = 765,000 + 0 – 550,000 – 148,000 – 48,000 = 19,000

13. **Operating Section: Direct Method (6.6.1)**

Cash flows from operating activities	
(add)Cash received from customers	(6.3.1)
(add)Cash received from interest and dividends	(6.3.2)
(less)Cash paid to suppliers	(6.3.6)
(less)Cash paid for operations	(6.3.7)
(less)Cash paid for taxes	(6.3.8)
Net cash provided by operating activities	(6.3.12)

Cash flows from operating activities	
Cash received from customers	765,000
Cash paid to suppliers	(550,000)
Cash paid for operations	(148,000)
Cash paid for taxes	(48,000)
Net cash provided by operating activities	19,000

14. **Cash Provided By Operating Activities: Indirect Method (6.3.13)**

Cash Provided By Operating Activities = Net Income
– Change In Accounts Receivable (6.2.1)
– Change In Inventory (6.2.5)
– Change In Prepaid Expenses (6.2.6)
+ Change In Accounts Payable (6.2.13)
+ Change In Accrued Expenses Payable (6.2.10)
+ Depreciation Expense (6.3.11)

Cash Provided By Operating Activities =
112,000 – 15,000 – 160,000 – 8,000 + 60,000 + 20,000 + 10,000 = 19,000

15. **Operating Section: Indirect Method (6.6.2)**

Reconciliation of Operating Activities	
Net Income	Net Income
(less)Increase in accounts receivable	(6.2.1)
(less)Increase in inventory	(6.2.5)
(less)Increase in prepaid expenses	(6.2.6)
(add)Increase in accounts payable	(6.2.13)
(add)Increase in accrued expenses payable	(6.2.10)
(add)Depreciation expense	(6.3.11)
Net cash provided by operating activities	(6.3.13)

Reconciliation of Operating Activities	
Net Income	112,000
Increase in accounts receivable	(15,000)
Increase in inventory	(160,000)
Increase in prepaid expenses	(8,000)
Increase in accounts payable	60,000
Increase in accrued expenses payable	20,000
Depreciation expense	10,000
Net cash provided by operating activities	19,000

6.5 Cash Flow Calculations: Simple

Example 47, 20X6:

Income Statement 20X6	
Service Revenue	$400
Wages Expense	(125)
Rent Expense	(100)
Depreciation Expense	(75)
Net Income	$100

Comparative Balance Sheets

	20X5	20X6
Cash	$100	$155
A/R	50	75
Prepaid Rent	70	50
Equipment	300	400
Accumulated Depreciation	(75)	(150)
Total Assets	$445	$530
Wages Payable	30	10
Capital Stock	200	230
Retained Earnings	215	290
Liabilities + Equity	$445	$530

Show the Cash Provided By Operating Activities: Direct Method.
Show the Cash Provided By Investing Activities.
Show the Cash Provided By Financing Activities.
Show the Net Increase In Cash.
Show the Cash Provided By Operating Activities: Indirect Method.

Solution 47:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance – Cash Beginning Balance
   Change In Cash = 155 – 100 = 55

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance – Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 75 – 50 = 25

3. **Cash Received From Customers (6.3.1)**
   Cash Received From Customers = Sales Revenues – Change In Accounts Receivable (6.2.1) + Change In Unearned Revenue (6.2.9)
   Cash Received From Customers = 400 – 25 + 0 = 375

4. **Change In Salary/Wages Payable (6.2.14)**
   Change In Salary/Wages Payable = Salary/Wages Payable Ending Balance – Salary/Wages Payable Beginning Balance
   Change In Salary/Wages Payable = 10 – 30 = -20

5. **Cash Paid To Employees (6.3.3)**
   Cash Paid To Employees = Salary Expense – Change In Salary/Wages Payable (6.2.14)
   Cash Paid To Employees = 125 – -20 = 145

6. **Change In Prepaid Rent (6.2.7)**
   Change In Prepaid Rent = Prepaid Rent Ending Balance – Prepaid Rent Beginning Balance
   Change In Prepaid Rent = 50 – 70 = -20

7. **Cash Paid For Rent (6.3.4)**
   Cash Paid For Rent = Rent Expense + Change In Prepaid Rent (6.2.7)
   Cash Paid For Rent = 100 + -20 = 80

8. **Cash Provided By Operating Activities: Direct Method (6.3.12)**
   Cash Provided By Operating Activities = + Cash Received From Customers (6.3.1)
   + Cash Received From Interest and Dividends (6.3.2)
   – Cash Paid To Employees (6.3.3)
   – Cash Paid To Suppliers (6.3.6)
   – Cash Paid For Rent (6.3.4)
   – Cash Paid For Operations (6.3.7)
   – Cash Paid For Taxes (6.3.8)
   – Cash Paid For Interest (6.3.9)
   Cash Provided By Operating Activities = + 375
   – 145
   – 80
   = 150

9. **Investing Cash Flows (6.4)**
   Cash Investing Activity = Property, Plant, or Equipment Ending Balance –
   Property, Plant, or Equipment Beginning Balance
   Cash Portion of Purchase of Equipment = Equipment Ending Balance –
   Equipment Beginning Balance
   Cash Portion of Purchase of Equipment = 400 – 300 = 100

10. **Cash Provided By Investing Activities (6.4.3)**
    Cash Provided By Investing Activities = + Cash Portion of Sale of Property (Land)
    – Cash Portion of Purchase of Property (Land)
    + Cash Portion of Sale of Plant (Building)
    – Cash Portion of Purchase of Plant (Building)
    + Cash Portion of Sale of Equipment
    – Cash Portion of Purchase of Equipment
    + Cash Portion of Sale of Investments
    – Cash Portion of Purchase of Investments
    + Cash Portion of Principal on Loan Collections
    – Cash Portion of Principal on Loans to Others
    Cash Provided By Investing Activities = -100

11. **Financing Cash Flows (6.5)**
    Cash Financing Activity = Equity, Loan, or Bond Ending Balance –
    Equity, Loan, or Bond Beginning Balance
    Issuance of Common Stock = Common Stock Ending Balance –
    Common Stock Beginning Balance
    Issuance of Common Stock = 230 – 200 = 30

12. **Change In Retained Earnings (6.2.19)**
    Change In Retained Earnings = Retained Earnings Ending Balance –
    Retained Earnings Beginning Balance
    Change In Retained Earnings = 290 – 215 = 75

13. **Cash Dividends Paid (6.5.1)**
    Cash Dividends Paid = Net Income –
    [Change In Retained Earnings (6.2.19) +
    Change In Dividends Payable (6.2.20)]
    Cash Dividends Paid = 100 – [75 + 0] = 25

14. **Cash Provided By Financing Activities (6.5.2)**
    Cash Provided By Financing Activities = + Issuance of Common Stock
    + Loans from a bank
    + Issuance of Bonds
    – Repurchase of Common Stock (Retirement or Treasury)
    – Principal Payments on loans to a bank
    – Redemption of Bonds
    – Cash Dividends Paid (6.5.1)
    – Principal Portion of Capital Lease Payments

Cash Provided By Financing Activities = 30 – 25 = 5

15. **Net Increase In Cash (6.5.3)**
    Net Increase In Cash =
    + Cash Provided By Operating Activities (6.3.12) or (6.3.13)
    + Cash Provided By Investing Activities (6.4.3)
    + Cash Provided By Financing Activities (6.5.2)
    = Change In Cash (6.1)
    Net Increase In Cash = 150 – 100 + 5 = 55

16. **Cash Provided By Operating Activities: Indirect Method (6.3.13)**
    Cash Provided By Operating Activities = Net Income
    – Change In Accounts Receivable (6.2.1)
    – Change In Prepaid Rent (6.2.7)
    + Change In Salary/Wages Payable (6.2.14)
    + Depreciation Expense (6.3.11)
    = 100 – 25 – -20 + -20 + 75 = 150

6.6 Cash Flow Calculations: Comprehensive

Example 48, Comprehensive Example 20X6:

Income Statement 20X6 (in millions)	
Sales Revenue	$100
Investment (Interest) Revenue	$3
Gain on Sale of Land	$8
Cost of Goods Sold	(60)
Salary Expense	(13)
Depreciation Expense	(3)
Bond Issue Expense	(5)
Insurance Expense	(7)
Loss on Sale of Equipment	(2)
Income Tax Expense	(9)
Net Income	$12

Comparative Balance Sheets (in millions)

	20X5	20X6
Cash	$20	$29
Accounts Receivable	30	32
Short-term Investments	0	12
Inventory	50	46
Prepaid Insurance	6	3
Land	60	80
Buildings and Equipment	75	81
Accumulated Depreciation	(20)	(16)
Total Assets	$221	$267
Accounts Payable	20	26
Salaries Payable	1	3
Income Tax Payable	8	6
Notes Payable	0	20
Bonds Payable	50	35
Discount on Bonds	(3)	(1)
Capital Stock	100	130
Paid-in Capital—Excess of Par	20	29
Retained Earnings	25	19
Liabilities + Equity	$221	$267

Additional Information

1. A portion of company land, purchased in a previous year for $10 million, was sold for $18 million.
2. Equipment that originally cost $14 million, and which was one-half depreciated, was sold for $5 million cash.
3. The common shares of Mazuma Corporation were purchased for $12 million as a short-term investment.
4. Property was purchased for $30 million cash for use as a parking lot.
5. On December 30, 20X6, new equipment was acquired by issuing a 12%, five-year, $20 million note payable to the seller.
6. On January 1, 20X6, $15 million of bonds were retired at maturity.
7. The increase in the common stock account is attributable to the issuance of a 10% stock dividend (1 million shares) and the subsequent sale of 2 million shares of common stock. The market price of the $10 par value common stock was $13 per share on the dates of both transactions.

8. Cash dividends of $5 million were paid to shareholders.

Show the Cash Provided By Operating Activities: Direct Method.
Show the Cash Provided By Investing Activities.
Show the Cash Provided By Financing Activities.
Show the Net Increase In Cash.
Show the Cash Provided By Operating Activities: Indirect Method.

Solution 48:

1. **Change In Cash (6.1)**
   Change In Cash = Cash Ending Balance – Cash Beginning Balance
   Change In Cash = 29 – 20 = 9

2. **Change In Accounts Receivable (6.2.1)**
   Change In Accounts Receivable = Accounts Receivable Ending Balance – Accounts Receivable Beginning Balance
   Change In Accounts Receivable = 32 – 30 = 2

3. **Cash Received From Customers (6.3.1)**
   Cash Received From Customers = Sales Revenues – Change In Accounts Receivable (6.2.1) + Change In Unearned Revenue (6.2.9)
   Cash Received From Customers = 100 – 2 + 0 = 98

4. **Cash Received From Interest and Dividends (6.3.2)**
   Cash Received From Interest and Dividends = [Interest Revenue – Change In Interest Receivable (6.2.2)] + [Dividend Revenue – Change In Dividends Receivable (6.2.3)]
   Cash Received From Interest and Dividends = [3 – 0] + [0 – 0] = 3

5. **Change In Inventory (6.2.5)**
   Change In Inventory = Inventory Ending Balance – Inventory Beginning Balance
   Change In Inventory = 46 – 50 = -4

6. **Change In Accounts Payable (6.2.13)**
   Change In Accounts Payable = Accounts Payable Ending Balance – Accounts Payable Beginning Balance
   Change In Accounts Payable = 26 – 20 = 6

7. **Cash Paid To Suppliers (6.3.6)**
   Cash Paid To Suppliers = Costs Of Goods Sold + Change In Inventory (6.2.5) – Change In Accounts Payable (6.2.13)
   Cash Paid To Suppliers = 60 + -4 – 6 = 50

8. **Change In Salary/Wages Payable (6.2.14)**
   Change In Salary/Wages Payable = Salary/Wages Payable Ending Balance – Salary/Wages Payable Beginning Balance
   Change In Salary/Wages Payable = 3 – 1 = 2

9. **Cash Paid To Employees (6.3.3)**
   Cash Paid To Employees = Salary Expense – Change In Salary/Wages Payable (6.2.14)
   Cash Paid To Employees = 13 – 2 = 11

10. **Change In Discount on Bonds (6.2.17)**
    Change In Discount on Bonds = Discount on Bonds Ending Balance – Discount on Bonds Beginning Balance
    Change In Discount on Bonds = 1 – 3 = -2

11. **Cash Paid For Interest (6.3.9)**
    Cash Paid For Interest = + Interest Expense
    + Change In Discount On Bonds (6.2.17)
    – Change In Interest Payable (6.2.16)
    – Change In Premium On Bonds (6.2.18)
    Cash Paid For Interest = 5 + -2 – 0 – 0 = 3

12. **Change In Prepaid Insurance (6.2.8)**
    Change In Prepaid Insurance = Prepaid Insurance Ending Balance –
    Prepaid Insurance Beginning Balance
    Change In Prepaid Insurance = 3 – 6 = -3

13. **Cash Paid For Insurance (6.3.5)**
    Cash Paid For Insurance = Insurance Expense +
    Change In Prepaid Insurance (6.2.8)
    Cash Paid For Insurance = 7 + -3 = 4

14. **Change In Taxes Payable (6.2.15)**
    Change In Taxes Payable = Taxes Payable Ending Balance –
    Taxes Payable Beginning Balance
    Change In Taxes Payable = 6 – 8 = -2

15. **Cash Paid For Taxes (6.3.8)**
    Cash Paid For Taxes = + Taxes Expense
    – Change In Taxes Payable (6.2.15)
    – Change In Deferred Tax Liability (6.2.11)
    + Change In Deferred Tax Asset (6.2.12)
    Cash Paid For Taxes = 9 – -2 – 0 + 0 = 11

16. **Cash Provided By Operating Activities: Direct Method (6.3.12)**

Cash Provided By Operating Activities =	+ Cash Received From Customers (6.3.1)	98
	+ Cash Received From Interest and Dividends (6.3.2)	3
	– Cash Paid To Employees (6.3.3)	11
	– Cash Paid To Suppliers (6.3.6)	50
	– Cash Paid For Insurance (6.3.5)	4
	– Cash Paid For Interest (6.3.9)	3
	– Cash Paid For Taxes (6.3.8)	11
Cash Provided By Operating Activities =		22

17. **Investing Cash Flows: Additional Information Provided (6.4.2): Equipment Sale**
    Investing Cash Inflow = [Cost Value –
    Accumulated Depreciation] –
    Loss on Sale
    Investing Cash Inflow = Cash Portion Of Sale of Equipment = [14 – 7] – 2 = 5

18. **Cash Portion of Sale of Property (Land)**
    Cash Portion of Sale of Property (Land) = 18

19. **Cash Portion of Sale of Property (Land)**
    Cash Portion of Sale of Property (Land) = 18

20. **Cash Portion of Purchase of Investments: Mazuma Corporation**
    Cash Portion of Purchase of Investments: Mazuma Corporation = 12

21. **Cash Portion of Purchase of Property (Land)**
    Cash Portion of Purchase of Property (Land) = 30

22. **Cash Provided By Investing Activities (6.4.3)**

Cash Provided By Investing Activities =	+ Cash Portion of Sale of Property (Land)	18
	– Cash Portion of Purchase of Property (Land)	30
	+ Cash Portion of Sale of Equipment	5
	– Cash Portion of Purchase of Investments	12
Cash Provided By Investing Activities =		(19)

23. **Redemption of Bonds**
    Redemption of Bonds = 15

24. **Issuance of Common Stock**
    Issuance of Common Stock = 26

25. **Cash Dividends Paid**
    Cash Dividends Paid = 5

26. **Cash Provided By Financing Activities (6.5.2)**

Cash Provided By Financing Activities =	+ Issuance of Common Stock	26
	– Redemption of Bonds	15
	– Cash Dividends Paid (6.5.1)	5
Cash Provided By Financing Activities =		6

27. **Gain or (Loss) on PP&E Sale (6.3.10): Land**
    Gain or (Loss) on PP&E Sale = Cash Received – Book Value
    Gain or (Loss) on PP&E Sale = 18 – 10 = 8

28. **Gain or (Loss) on PP&E Sale (6.3.10): Equipment**
    Gain or (Loss) on PP&E Sale = Cash Received – Book Value
    Gain or (Loss) on PP&E Sale = 5 – (14 – 7) = -2

29. **Net Increase In Cash (6.5.3)**

Net Increase In Cash =		
	+ Cash Provided By Operating Activities (6.3.12) or (6.3.13)	22
	+ Cash Provided By Investing Activities (6.4.3)	(19)
	+ Cash Provided By Financing Activities (6.5.2)	6
	= Change In Cash (6.1)	9

30. **Cash Provided By Operating Activities: Indirect Method (6.3.13)**

Cash Provided By Operating Activities =	Net Income	12
	– Change In Accounts Receivable (6.2.1)	2
	– Change In Inventory (6.2.5)	-4
	– Change In Prepaid Insurance (6.2.8)	-3
	– Gain on PP&E Sale (Land) (6.3.10)	8
	+ Change In Accounts Payable (6.2.13)	6
	+ Change In Salary/Wages Payable (6.2.14)	2
	+ (Loss) on PP&E Sale (Equipment) (6.3.10)	2
	+ Depreciation Expense (6.3.11)	3
	+ Change In Discount On Bonds (6.2.17)	-2
	+ Change In Taxes Payable (6.2.15)	-2
Cash Provided By Operating Activities =		22

Chapter 7

Investments and Bonds Examples

7.1 Stock Fair Value Method SAS: Simple

Example 49
The 12/31/X5 balance sheet of a firm reported investments in SAS at $40,000 and related fair value adjustment of $2,000 dr. A year later, at 12/31/X6, the market value of the SAS portfolio was $37,000. There were no purchases or sales of investments during 20X6. Record the 20X6 AJE required under the fair value method.

Solution 49:

1. **Ledger**

SAS

12/31/X5 40,000	
12/31/X5 2,000	
balance 42,000	

2. **Stock Securities Available For Sale Adjustment (7.4.8)**
   Securities Available For Sale Adjustment = Fair Value$_{security}$ –
   Securities Available For Sale$_{security}$ (7.4.1) Balance
   Securities Available For Sale Adjustment = 37,000 – 42,000 = -5,000

   Since Stock Securities Available For Sale Adjustment < 0 then:

		Debit	Credit
12/31/XX	Unrealized Holding Gain/Loss—Equity$_{security}$ (7.4.2)	(7.4.8)	
	Securities Available For Sale$_{security}$ (7.4.1)		(7.4.8)

		Debit	Credit
12/31/X6	Unrealized Holding Gain/Loss—Equity SAS	5,000	
	SAS		5,000

   Ledger

SAS

12/31/X5 40,000	
12/31/X5 2,000	
	12/31/X6 5,000
balance 37,000	

7.2 Stock Fair Value Method SAS: Comprehensive

Example 50
Purchased Red, Corp. on 9/1/X7 = 57,000.
Purchased Orange, Corp. on 9/1/X7 = 76,000.
Fair value of Red, Corp. on 12/31/X7 = 55,000.
Fair value of Orange, Corp. on 12/31/X7 = 88,000.
Fair value of Red, Corp. on 12/31/X8 = 65,000.
Fair value of Orange, Corp. on 12/31/X8 = 86,000.

Sold Red, Corp. on 3/1/X9 = 56,500.
Sold Orange, Corp. on 3/1/X9 = 86,000.

Prepare all of the journal entries for these transactions.

Solution 50:

1. **Stock Securities Available For Sale: Purchase (7.4.4)**

		Debit	Credit
XX/XX/XX	Securities Available For Sale$_{security}$ (7.4.1)	Stock Cost (7.2.1)	
	Cash		Stock Cost (7.2.1)

		Debit	Credit
09/01/X7	Securities Available For Sale: Red, Corp.	57,000	
	Cash		57,000

		Debit	Credit
09/01/X7	Securities Available For Sale: Orange, Corp.	76,000	
	Cash		76,000

Ledgers

Securities Available For Sale: Red, Corp.

9/1/X7 57,000 (7.4.4)	
balance 57,000	

Securities Available For Sale: Orange, Corp.

9/1/X7 20 (7.4.4)	
balance 76,000	

2. **Stock Securities Available For Sale Adjustment (7.4.8): Red, Corp.**
Securities Available For Sale Adjustment = Fair Value$_{security}$ – Securities Available For Sale$_{security}$ (7.4.1) Balance
Securities Available For Sale Adjustment = 55,000 – 57,000 = -2,000

Since Stock Securities Available For Sale Adjustment < 0 then:

		Debit	Credit
12/31/XX	Unrealized Holding Gain/Loss—Equity$_{security}$ (7.4.2)	(7.4.8)	
	Securities Available For Sale$_{security}$ (7.4.1)		(7.4.8)

		Debit	Credit
12/31/X7	Unrealized Holding Gain/Loss—Equity: Red, Corp.	2,000	
	Securities Available For Sale: Red, Corp.		2,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.8)	
balance 2,000	

Securities Available For Sale: Red, Corp.

9/1/X7 57,000 (7.4.4)	
	12/31/X7 2,000 (7.4.8)
balance 55,000	

3. **Stock Securities Available For Sale Adjustment (7.4.8): Orange, Corp.**
Securities Available For Sale Adjustment = Fair Value$_{security}$ – Securities Available For Sale$_{security}$ (7.4.1) Balance
Securities Available For Sale Adjustment = 88,000 – 76,000 = 12,000

Since Stock Securities Available For Sale Adjustment > 0 then:

		Debit	Credit
12/31/XX	Securities Available For Sale$_{security}$ (7.4.1)	(7.4.8)	
	Unrealized Holding Gain/Loss—Equity$_{security}$ (7.4.2)		(7.4.8)

		Debit	Credit
12/31/X7	Securities Available For Sale: Orange, Corp.	12,000	
	Unrealized Holding Gain/Loss—Equity: Orange, Corp.		12,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.8)
	balance 12,000

Securities Available For Sale: Orange, Corp.

9/1/X7 76,000 (7.4.4)	
12/31/X7 12,000 (7.4.8)	
balance 88,000	

Now print the Income Statement.

4. **Stock Securities Available For Sale Closing Entries (7.4.10): Red, Corp.**
Since Unrealized Holding Gain/Loss—Equity$_{security}$ has a loss:

		Debit	Credit
12/31/XX	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.2) Balance	
	Unrealized Holding Gain/Loss—Equity$_{security}$		(7.4.2) Balance

		Debit	Credit
12/31/X7	Accumulated Unrealized Holding Gain/Loss—Red, Corp.	2,000	
	Unrealized Holding Gain/Loss—Red, Corp.		2,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.8)	
	12/31/X7 2,000 (7.4.10)
balance 0	

Accumulated Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.10)	
balance 2,000	

5. **Stock Securities Available For Sale Closing Entries (7.4.10): Orange, Corp.**
Since Unrealized Holding Gain/Loss—Equity$_{security}$ has a gain:

		Debit	Credit
12/31/XX	Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.2) Balance	
	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$		(7.4.2) Balance

		Debit	Credit
12/31/X7	Unrealized Holding Gain/Loss—Orange, Corp.	12,000	
	Accumulated Unrealized Holding Gain/Loss—Orange, Corp.		12,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.8)
12/31/X7 12,000 (7.4.10)	
	balance 0

Accumulated Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.10)
	balance 12,000

Now print the Balance Sheet.

6. **Stock Securities Available For Sale Adjustment (7.4.8): Red, Corp.**
Securities Available For Sale Adjustment = Fair Value$_{security}$ –
Securities Available For Sale$_{security}$ (7.4.1) Balance
Securities Available For Sale Adjustment = 65,000 – 55,000 = 10,000

Since Stock Securities Available For Sale Adjustment > 0 then:

		Debit	Credit
12/31/XX	Securities Available For Sale$_{security}$ (7.4.1)	(7.4.8)	
	Unrealized Holding Gain/Loss—Equity$_{security}$ (7.4.2)		(7.4.8)

		Debit	Credit
12/31/X8	Securities Available For Sale: Red, Corp.	10,000	
	Unrealized Holding Gain/Loss—Equity: Red, Corp.		10,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.8)	
	12/31/X7 2,000 (7.4.10)
	12/31/X8 10,000 (7.4.8)
	balance 10,000

Securities Available For Sale: Red, Corp.

9/1/X7 57,000 (7.4.4)	
	12/31/X7 2,000 (7.4.8)
12/31/X8 10,000 (7.4.8)	
balance 65,000	

7. **Stock Securities Available For Sale Adjustment (7.4.8): Orange, Corp.**
   Securities Available For Sale Adjustment = Fair Value$_{security}$ –
   Securities Available For Sale$_{security}$ (7.4.1) Balance
   Securities Available For Sale Adjustment = 86,000 – 88,000 = -2,000

   Since Stock Securities Available For Sale Adjustment < 0 then:

		Debit	Credit
12/31/XX	Unrealized Holding Gain/Loss—Equity$_{security}$ (7.4.2)	(7.4.8)	
	Securities Available For Sale$_{security}$ (7.4.1)		(7.4.8)

		Debit	Credit
12/31/X8	Unrealized Holding Gain/Loss—Equity: Orange, Corp.	2,000	
	Securities Available For Sale: Orange, Corp.		2,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.8)
12/31/X7 12,000 (7.4.10)	
12/31/X8 2,000 (7.4.8)	
balance 2,000	

Securities Available For Sale: Orange, Corp.

9/1/X7 76,000 (7.4.4)	
12/31/X7 12,000 (7.4.8)	
	12/31/X8 2,000 (7.4.8)
balance 86,000	

Now print the Income Statement.

8. **Stock Securities Available For Sale Closing Entries (7.4.10): Red, Corp.**
   Since Unrealized Holding Gain/Loss—Equity$_{security}$ has a gain:

		Debit	Credit
12/31/XX	Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.2) Balance	
	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$		(7.4.2) Balance

		Debit	Credit
12/31/X8	Unrealized Holding Gain/Loss—Red, Corp.	10,000	
	Accumulated Unrealized Holding Gain/Loss—Red, Corp.		10,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.8)	
	12/31/X7 2,000 (7.4.10)
	12/31/X8 10,000 (7.4.8)
12/31/X8 10,000 (7.4.10)	
	balance 0

Accumulated Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.10)	
	12/31/X8 10,000 (7.4.10)
	balance 8,000

9. **Stock Securities Available For Sale Closing Entries (7.4.10): Orange, Corp.**

Since Unrealized Holding Gain/Loss—Equity$_{security}$ has a loss:

		Debit	Credit
12/31/XX	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.2) Balance	
	Unrealized Holding Gain/Loss—Equity$_{security}$		(7.4.2) Balance

		Debit	Credit
12/31/X8	Accumulated Unrealized Holding Gain/Loss—Orange, Corp.	2,000	
	Unrealized Holding Gain/Loss—Orange, Corp.		2,000

Ledgers

Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.8)
12/31/X7 12,000 (7.4.10)	
12/31/X8 2,000 (7.4.8)	
	12/31/X8 2,000 (7.4.10)
balance 0	

Accumulated Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.10)
12/31/X8 2,000 (7.4.10)	
	balance 10,000

Now print the Balance Sheet.

10. **Stock Securities Available For Sale: Gain or (Loss) on Sale (7.4.9): Red, Corp.**
Gain or (Loss) on Sale = Proceeds –
Securities Available For Sale$_{security}$ Opening Balance (7.4.4)
Gain or (Loss) on Sale = 56,500 – 57,000 = -500

Since Gain or (Loss) on Sale < 0 and Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$ has a gain:

		Debit	Credit
XX/XX/XX	Cash	Proceeds	
	Loss On Sale of Securities	(7.4.9)	
	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.3) Balance	
	Securities Available For Sale$_{security}$		(7.4.1)

		Debit	Credit
03/01/X9	Cash	56,500	
	Loss On Sale of Securities	500	
	Accumulated Unrealized Holding Gain/Loss—Equity: Red, Corp.	8,000	
	Securities Available For Sale: Red, Corp.		65,000

Ledgers

Accumulated Unrealized Holding Gain/Loss—Equity: Red, Corp.

12/31/X7 2,000 (7.4.10)	
	12/31/X8 10,000 (7.4.10)
3/1/98 8,000 (7.4.9)	
	balance 0

Securities Available For Sale: Red, Corp.

9/1/X7 57,000 (7.4.4)	
	12/31/X7 2,000 (7.4.8)
12/31/X8 10,000 (7.4.8)	
	3/1/X9 65,000 (7.4.9)
balance 0	

11. **Stock Securities Available For Sale: Gain or (Loss) on Sale (7.4.9): Orange, Corp.**
Gain or (Loss) on Sale = Proceeds –
Securities Available For Sale$_{security}$ Opening Balance (7.4.4)
Gain or (Loss) on Sale = 86,000 – 76,000 = 10,000

Since Gain or (Loss) on Sale > 0 and Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$ has a gain:

		Debit	Credit
XX/XX/XX	Cash	Proceeds	
	Accumulated Unrealized Holding Gain/Loss—Equity$_{security}$	(7.4.3) Balance	
	Gain On Sale of Securities		(7.4.9)
	Securities Available For Sale$_{security}$		(7.4.1) Balance

		Debit	Credit
03/01/X9	Cash	86,000	
	Accumulated Unrealized Holding Gain/Loss—Equity: Orange, Corp.	10,000	
	Gain On Sale of Securities		10,000
	Securities Available For Sale: Orange, Corp.		86,000

Ledgers

Accumulated Unrealized Holding Gain/Loss—Equity: Orange, Corp.

	12/31/X7 12,000 (7.4.10)
12/31/X8 2,000 (7.4.10)	
3/1/X9 10,000 (7.4.9)	
	balance 0

Securities Available For Sale: Orange, Corp.

9/1/X7 76,000 (7.4.4)	
12/31/X7 12,000 (7.4.8)	
	12/31/X8 2,000 (7.4.8)
	3/1/X9 86,000 (7.4.9)
balance 0	

7.3 Equity Method

Example 51, 20X8
Purchased 20% of Small, Corp. on 1/2/20X8 = 300,000.
Small, Corp. Inventory Book Value = 400,000.
Small, Corp. Inventory Fair Value = 405,000.
Small, Corp. sold all of this inventory during 20X8.
Small, Corp. Property, Plant, and Equipment Book Value = 500,000.
Small, Corp. Property, Plant, and Equipment Fair Value = 700,000.
Small, Corp. PP&E Estimated Average Remaining Useful Life = 10 years.
Small, Corp. 20X8 Income Before Extraordinary Items = 80,000.
Small, Corp. 20X8 Extraordinary Gain = 30,000.
Small, Corp. 20X8 Cash Dividend = 50,000.

Prepare all of the journal entries for 20X8.
Solution 51:

1. **Equity Investment: Purchase Journal Entry (7.7.3)**

		Debit	Credit
XX/XX/XX	Equity Investment$_{security}$ (7.7.1)	(7.2.1)	
	Cash		(7.2.1)

		Debit	Credit
01/02/X8	Equity Investment: Small, Corp	300,000	
	Cash		300,000

Ledger

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
balance 300,000	

2. **Equity Investment: Percentage of Year Held (7.7.5)**
   Since Current Year = Year Of Purchase then:
   $$\text{Percentage of Year Held} = \frac{\text{Months Remaining In Year}}{12}$$
   $$\text{Percentage of Year Held} = \frac{12}{12} = 1.0$$

3. **Equity Investment: Income Before Extraordinary Items Realization Amount (7.7.8)**

Income Before Extraordinary Items Realization Amount = Acquiree's Income Before Extraordinary Items ×
Ownership Percentage (7.7.2) ×
Percentage of Year Held (7.7.5)

Income Before Extraordinary Items Realization Amount = 80,000 × 0.20 × 1.0 = 16,000

Journal Entry

		Debit	Credit
12/31/XX	Equity Investment$_{security}$ (7.7.1)	(7.7.8)	
	Equity Investment Revenue (7.2.4)		(7.7.8)

		Debit	Credit
12/31/X8	Equity Investment: Small, Corp	16,000	
	Equity Investment Revenue		16,000

Ledgers

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
12/31/X8 16,000 (7.7.8)	
balance 316,000	

Equity Investment Revenue

	12/31/X8 16,000 (7.7.8)
	balance 16,000

4. **Extraordinary Items Realization Amount (7.7.9)**

Extraordinary Items Realization Amount = Acquiree's Extraordinary Items ×
Ownership Percentage (7.7.2)

Extraordinary Items Realization Amount = 30,000 × 0.20 × 1.0 = 6,000

Journal Entry, Since Extraordinary Items Realization Amount > 0 then:

		Debit	Credit
12/31/XX	Equity Investment$_{security}$ (7.7.1)	(7.7.9)	
	Extraordinary Gain		(7.7.9)

		Debit	Credit
12/31/X8	Equity Investment: Small, Corp.	6,000	
	Extraordinary Gain		6,000

Ledgers

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
12/31/X8 16,000 (7.7.8)	
12/31/X8 6,000 (7.7.9)	
balance 322,000	

Extraordinary Gain

	12/31/X8 6,000 (7.7.9)
	balance 6,000

5. **Equity Investment: Majority Dividend Realization Amount (7.7.11)**

Majority Dividend Realization Amount = Acquiree's Dividends Declared ×
Ownership Percentage (7.7.2)

Dividend Realization Amount = 50,000 × 0.20 = 10,000

Journal Entry

		Debit	Credit
12/31/XX	Cash or Dividends Receivable	(7.7.11)	
	Equity Investment$_{security}$ (7.7.1)		(7.7.11)

		Debit	Credit
12/31/X8	Cash	10,000	
	Equity Investment: Small, Corp.		10,000

Ledger

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
12/31/X8 16,000 (7.7.8)	
12/31/X8 6,000 (7.7.9)	
	12/31/X8 10,000 (7.7.11)
balance 312,000	

6. **Depreciatable Assets Premium (7.7.12)**
   Depreciatable Assets Premium = Acquiree's Depreciatable Assets Fair Value – Acquiree's Depreciatable Assets Book Value
   Depreciatable Assets Premium = 700,000 – 500,000 = 200,000

7. **Equity Investment: Depreciation Realization Amount (7.7.13)**
   Since Depreciatable Assets Premium (7.7.12) > 0 then:
   $$\text{Depreciation Realization Amount} = \frac{\text{Depreciatable Assets Premium (7.7.12)} \times \text{Ownership Percentage (7.7.2)}}{\text{Estimated Average Useful Years}} \times \text{Percentage of Year Held (7.7.5)}$$
   $$\text{Depreciation Realization Amount} = \frac{200{,}000 \times 0.20}{10} \times 1.0 = 4{,}000$$
   Journal Entry

		Debit	Credit
12/31/XX	Equity Investment Revenue (7.2.4)	(7.7.13)	
	Equity Investment$_{security}$ (7.7.1)		(7.7.13)

		Debit	Credit
12/31/X8	Equity Investment Revenue	4,000	
	Equity Investment: Small, Corp.		4,000

   Ledgers

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
12/31/X8 16,000 (7.7.8)	
12/31/X8 6,000 (7.7.9)	
	12/31/X8 10,000 (7.7.11)
	12/31/X8 4,000 (7.7.13)
balance 308,000	

Equity Investment Revenue

	12/31/X8 16,000 (7.7.8)
12/31/X8 4,000 (7.7.13)	
	balance 12,000

8. **Equity Investment: Inventory Premium (7.7.18)**
   Inventory Premium = Acquiree's Inventory Fair Value – Acquiree's Inventory Book Value
   Inventory Premium = 405,000 – 400,000 = 5,000

9. **Equity Investment: Inventory Realization Amount (7.7.19)**
   Since Inventory Premium (7.7.18) > 0 then:
   Inventory Realization Amount = Inventory Premium (7.7.18) × Ownership Percentage (7.7.2) × Percentage of Original Inventory Sold During Year
   Inventory Realization Amount = 5,000 × 0.20 × 1.0 = 1,000
   Journal Entry

		Debit	Credit
12/31/XX	Equity Investment Revenue (7.2.4)	(7.7.19)	
	Equity Investment$_{security}$ (7.7.1)		(7.7.19)

		Debit	Credit
12/31/X8	Equity Investment Revenue	1,000	
	Equity Investment: Small, Corp.		1,000

   Ledgers

Equity Investment: Small, Corp.

1/2/X8 300,000 (7.2.1)	
12/31/X8 16,000 (7.7.8)	
12/31/X8 6,000 (7.7.9)	
	12/31/X8 10,000 (7.7.11)
	12/31/X8 4,000 (7.7.13)
	12/31/X8 1,000 (7.7.19)
balance 307,000	

Equity Investment Revenue

	12/31/X8 16,000 (7.7.8)
12/31/X8 4,000 (7.7.13)	
12/31/X8 1,000 (7.7.19)	
	balance 11,000

7.4 Bond Held To Maturity: Amortized Method

Example 52
Purchase cost = \$92,278.
Face Value = \$100,000.
Coupon rate = 8%.
Effective rate = 10%.
Purchase date = 4/1/2X08.
Maturity date = 3/31/2X13.
Interest payment dates = 9/30 and 3/31.
The firm is willing and able to hold the bond until maturity.

What is the purchase journal entry?
What is the first interest journal entry?
What is the end-of-year adjusting journal entry?
What is the second interest journal entry?
What is the retirement journal entry?

Solution 52:

1. **Semi-Annual Coupon Amount Per Bond (7.8.4)**
   Semi-Annual Coupon Amount Per bond = \$1,000 $\times \frac{\text{Coupon Rate}}{2}$
   Semi-Annual Coupon Amount Per bond = \$1,000 $\times \frac{0.08}{2} = 40$
2. **Semi-Annual Interest Receivable Amount (7.8.7)**
   Semi-Annual Interest Receivable Amount = Semi-Annual Coupon Amount Per Bond (7.8.4) $\times$ Bond Purchase Quantity
   Semi-Annual Interest Receivable Amount = $40 \times 100 = 4{,}000$
3. **Bond Premium/(Discount) Amount (7.8.9)**
   Bond Premium/(Discount) Amount = Bond Purchase Cost (7.8.1) – Bond Redemption Amount (7.8.3)
   Bond Premium/(Discount) Amount = 92,278 – 100,000 = -7,722
4. **Bond Held To Maturity: Purchase (7.9.2)**

		Debit	Credit
XX/XX/XXXX	Bond Held To Maturity$_{security}$ (7.9.1)	Bond Purchase Cost (7.8.1)	
	Cash		(7.8.1)

		Debit	Credit
04/01/2X08	Bond Held To Maturity	92,278	
	Cash		92,278

Ledger

Bond Held To Maturity

04/01/2X08 92,278	
balance 92,278	

5. **Bond Interest Receivable Amount (7.8.10) 09/30/2X08**
   Since this is the first interest payment received then:
   Interest Receivable Amount = Semi-Annual Interest Receivable Amount (7.8.7)
   Interest Receivable Amount = 4,000

6. **Bond Interest Revenue Amount (7.8.11)**
   Since this is the first interest payment received then:
   Interest Revenue Amount = $\text{Bond}_{security}$ (7.9.1) Debit Balance × Effective Interest Rate (7.8.6) × $\frac{6}{12}$
   Interest Revenue Amount = 92,278 × 0.10 × $\frac{6}{12}$ = 4,614

7. **Bond Amortization Amount (7.8.12)**
   Since Premium/(Discount) (7.8.9) < 0 then:
   Bond Amortization Amount = Bond Interest Revenue Amount (7.8.11) – Bond Interest Receivable (7.8.10)
   Bond Amortization Amount = 4,614 – 4,000 = 614

8. **Bond Held To Maturity: Interest and Amortization Journal Entry (7.9.3)**
   Since Premium/(Discount) (7.8.9) < 0

		Debit	Credit
XX/XX/XXXX	Interest Receivable	Receivable (7.8.10)	
	Bond Held To Maturity$_{security}$ (7.9.1)	Amortization (7.8.12)	
	Interest Revenue		Revenue (7.8.11)

		Debit	Credit
09/30/2X08	Interest Receivable	4,000	
	Bond Held To Maturity	614	
	Interest Revenue		4,614

   Ledger

Bond Held To Maturity

04/01/2X08 92,278	
09/30/2X08 614	
balance 92,892	

9. **Interest Cash Received (7.9.4)**

		Debit	Credit
XX/XX/XXXX	Cash	Semi-Annual Interest Receivable Amount (7.8.7)	
	Interest Receivable		(7.8.7)

		Debit	Credit
09/30/2X08	Cash	4,000	
	Interest Receivable		4,000

10. **Bond Interest Receivable Amount (7.8.10) 12/31/20X8**
    Since Current Date = December 31 and December 31 is not an interest date then:
    Interest Receivable Amount = Semi-Annual Interest Receivable Amount (7.8.7) × $\frac{\text{Number of Months Since Last Interest Payment}}{6}$
    Interest Receivable Amount = 4,000 × $\frac{3}{6}$ = 2,000

11. **Bond Interest Revenue Amount (7.8.11)**
    Since Current Date = December 31 and December 31 is not an interest date then:
    Interest Revenue Amount = $\text{Bond}_{security}$ (7.9.1) Debit Balance × Effective Interest Rate (7.8.6) × $\frac{\text{Number of Months Since Last Interest Payment}}{12}$
    Interest Revenue Amount = 92,892 × 0.10 × $\frac{3}{12}$ = 2,322

12. **Bond Amortization Amount (7.8.12)**
    Since Premium/(Discount) (7.8.9) < 0 then:
    Bond Amortization Amount = Bond Interest Revenue Amount (7.8.11) – Bond Interest Receivable (7.8.10)
    Bond Amortization Amount = 2,322 – 2,000 = 322

13. **Bond Held To Maturity: Interest and Amortization Journal Entry (7.9.3)**
Since Premium/(Discount) (7.8.9) < 0

		Debit	Credit
XX/XX/XXXX	Interest Receivable	Receivable (7.8.10)	
	Bond Held To Maturity$_{security}$ (7.9.1)	Amortization (7.8.12)	
	Interest Revenue		Revenue (7.8.11)

		Debit	Credit
12/31/2X08	Interest Receivable	2,000	
	Bond Held To Maturity	322	
	Interest Revenue		2,322

Ledger

Bond Held To Maturity

04/01/2X08 92,278	
09/30/2X08 614	
12/31/2X08 322	
balance 93,214	

14. **Bond Interest Receivable Amount (7.8.10) 03/31/2X09**
Since Interest Date < July 1 and this is not the first interest payment received then:
Interest Receivable Amount = Semi-Annual Interest Receivable Amount (7.8.7) $\times$ $\frac{6 - \text{Number of Months Last Year Since Interest Payment}}{6}$
Interest Receivable Amount = $4{,}000 \times \frac{6-3}{6} = 2{,}000$

15. **Bond Interest Revenue Amount (7.8.11)**
Since Interest Date < July 1 and this is not the first interest payment received then:
Interest Revenue Amount = Bond$_{security}$ (7.9.1) Debit Balance $\times$ Effective Interest Rate (7.8.6) $\times$ $\frac{6 - \text{Number of Months Last Year Since Interest Payment}}{12}$
Interest Revenue Amount = $93{,}214 \times 0.10 \times \frac{6-3}{12} = 2{,}330$

16. **Bond Amortization Amount (7.8.12)**
Since Premium/(Discount) (7.8.9) < 0 then:
Bond Amortization Amount = Bond Interest Revenue Amount (7.8.11) – Bond Interest Receivable (7.8.10)
Bond Amortization Amount = 2,330 – 2,000 = 330

17. **Bond Held To Maturity: Interest and Amortization Journal Entry (7.9.3)**
Since Premium/(Discount) (7.8.9) < 0

		Debit	Credit
XX/XX/XXXX	Interest Receivable	Receivable (7.8.10)	
	Bond Held To Maturity$_{security}$ (7.9.1)	Amortization (7.8.12)	
	Interest Revenue		Revenue (7.8.11)

		Debit	Credit
03/31/2X09	Interest Receivable	2,000	
	Bond Held To Maturity	330	
	Interest Revenue		2,330

Ledger

Bond Held To Maturity

04/01/2X08 92,278	
09/30/2X08 614	
12/31/2X08 322	
03/31/2X09 330	
balance 93,544	

18. **Interest Cash Received (7.9.4)**

		Debit	Credit
XX/XX/XXXX	Cash	Semi-Annual Interest Receivable Amount (7.8.7)	
	Interest Receivable		(7.8.7)

		Debit	Credit
03/31/2X09	Cash	4,000	
	Interest Receivable		4,000

19. **Bond Held To Maturity: Redemption (7.9.5)**

		Debit	Credit
XX/XX/XXXX	Cash	(7.8.3)	
	Bond Held To Maturity$_{security}$ (7.9.1)		(7.8.3)

		Debit	Credit
03/31/2X13	Cash	100,000	
	Bond Held To Maturity		100,000

Chapter 8

Consolidation Method Examples

8.1 Business Combinations: Statutory Merger

Example 53
Acquiree Capitalization = $5,000,000.
Acquirer Capitalization = $45,000,000.
Acquirer Common Shares Outstanding = 900,000.

How many acquirer's shares are issued to the acquiree's stockholders?

Solution 53:

1. **Statutory Merger Shares to Issue (8.1.4)**

$$\text{Acquiree Ownership Percent} = \frac{\text{Acquiree Market Capitalization}}{\text{Acquiree Market Capitalization + Acquirer Market Capitalization}}$$

$$\text{Acquiree Common Shares Received} = \frac{\text{Acquiree Ownership Percent} \times \text{Acquirer Common Shares Outstanding}}{\text{1 - Acquiree Ownership Percent}}$$

$$\text{Acquiree Ownership Percent} = \frac{5{,}000{,}000}{5{,}000{,}000 + 45{,}000{,}000} = 0.10$$

$$\text{Acquiree Common Shares Received} = \frac{0.10 \times 900{,}000}{1 - 0.10} = 100{,}000$$

8.2 Business Combinations: Statutory Consolidation

Example 54
Acquirer Capitalization = $45,000,000.
Acquiree Capitalization = $5,000,000.
Consolidated Shares Issued = 2,000,000.

How many shares are issued to the acquirer's stockholders?
How many shares are issued to the acquiree's stockholders?

Solution 54:

1. **Per Share Market Value of Consolidated (8.1.6)**

$$\text{Per Share Market Value of Consolidated} = \frac{\text{Acquiree Market Capitalization + Acquirer Market Capitalization}}{\text{Consolidated Shares Issued}}$$

$$\text{Per Share Market Value of Consolidated} = \frac{5{,}000{,}000 + 45{,}000{,}000}{2{,}000{,}000} = 25.00$$

2. **Acquiree Consolidated Shared (8.1.7)**

$$\text{Acquiree Consolidated Shares} = \frac{\text{Acquiree Market Capitalization}}{\text{Per Share Market Value of Consolidated (8.1.6)}}$$

$$\text{Acquiree Consolidated Shares} = \frac{5{,}000{,}000}{25.00} = 200{,}000$$

3. **Acquirer Consolidated Shared (8.1.8)**

$$\text{Acquirer Consolidated Shares} = \frac{\text{Acquirer Market Capitalization}}{\text{Per Share Market Value of Consolidated (8.1.6)}}$$

$$\text{Acquirer Consolidated Shares} = \frac{45{,}000{,}000}{25.00} = 1{,}800{,}000$$

8.3 Contingent Consideration: Net Income

Example 55
Contingent Consideration is a range of the acquirer's stock consideration depending upon a fluctuation of either the acquiree's net income or the acquirer's stock price. If the acquiree's net income exceeds a threshold, then the Exchange Ratio increases from 2.0 to 3.0.

Agreed upon exchange ratio = 2.0.
Contingent exchange ratio = 3.0.
Acquirer's current price per share = $15.00.
Acquiree's shares outstanding = 100,000.

What is the purchase price if the earnings threshold is not met?
What is the purchase price if the earnings threshold is met?

Solution 55:

1. **Stock Consideration Shares Acquirer Issues (8.1.11)**
   Stock Consideration Shares Acquirer Issues = Acquiree Shares Outstanding × Exchange Ratio (8.1.10)
   Stock Consideration Shares Acquirer Issues = 100,000 × 2.0 = 200,000

2. **Stock Consideration Stock Cost (8.1.12)**
   Stock Consideration Stock Cost = Stock Consideration Shares Acquirer Issues (8.1.11) × Per Share Market Value of Acquirer
   Stock Consideration Stock Cost if no threshold = 200,000 × 15 = $3,000,000

3. **Stock Consideration Shares Acquirer Issues (8.1.11)**
   Stock Consideration Shares Acquirer Issues = Acquiree Shares Outstanding × Exchange Ratio (8.1.10)
   Stock Consideration Shares Acquirer Issues = 100,000 × 3.0 = 300,000

4. **Stock Consideration Stock Cost (8.1.12)**
   Stock Consideration Stock Cost = Stock Consideration Shares Acquirer Issues (8.1.11) × Per Share Market Value of Acquirer
   Stock Consideration Stock Cost if threshold = 300,000 × 15 = $4,500,000

8.4 Contingent Consideration: Acquirer's Stock Price

Example 56
Contingent Consideration is a range of the acquirer's stock consideration depending upon a fluctuation of either the acquiree's net income or the acquirer's stock price. If the acquirer's stock prices drops to or below the threshold of $40, then the Exchange Ratio is recalculated.

Purchase price = $10,000,000.
Acquiree shares outstanding = 100,000.

How many new shares to issue if the acquirer's stock price is $50?
How many new shares to issue if the acquirer's stock price is $40?

Solution 56:

1. **Stock Consideration Shares Acquirer Issues (8.1.11)**
   Stock Consideration Shares Acquirer Issues = Acquiree Shares Outstanding × Exchange Ratio (8.1.10)
   –AND–
   Stock Consideration Stock Cost (8.1.12)
   Stock Consideration Stock Cost = Stock Consideration Shares Acquirer Issues (8.1.11) × Per Share Market Value of Acquirer

$$\text{Stock Consideration Stock Cost} = \text{Acquiree Shares Outstanding} \times \text{Exchange Ratio (8.1.10)} \times \text{Per Share Market Value of Acquirer}$$

$$\text{Exchange Ratio (8.1.10)} = \frac{\text{Stock Cost (7.2.1)}}{\text{Acquiree Shares Outstanding} \times \text{Per Share Market Value of Acquirer}}$$

$$\text{Exchange Ratio} = \frac{10{,}000{,}000}{100{,}000 \times 50} = 2.0$$

2. **Stock Consideration Shares Acquirer Issues (8.1.11)**

$$\text{Stock Consideration Shares Acquirer Issues} = \text{Acquiree Shares Outstanding} \times \text{Exchange Ratio (8.1.10)}$$

$$\text{Shares Acquirer Issues if threshold is not met} = 100{,}000 \times 2.0 = 200{,}000$$

3. **Stock Consideration Shares Acquirer Issues (8.1.11)**

$$\text{Stock Consideration Shares Acquirer Issues} = \text{Acquiree Shares Outstanding} \times \text{Exchange Ratio (8.1.10)}$$

–AND–

Stock Consideration Stock Cost (8.1.12)

$$\text{Stock Consideration Stock Cost} = \text{Stock Consideration Shares Acquirer Issues (8.1.11)} \times \text{Per Share Market Value of Acquirer}$$

$$\text{Stock Consideration Stock Cost} = \text{Acquiree Shares Outstanding} \times \text{Exchange Ratio (8.1.10)} \times \text{Per Share Market Value of Acquirer}$$

$$\text{Exchange Ratio (8.1.10)} = \frac{\text{Stock Cost (7.2.1)}}{\text{Acquiree Shares Outstanding} \times \text{Per Share Market Value of Acquirer}}$$

$$\text{Exchange Ratio} = \frac{10{,}000{,}000}{100{,}000 \times 40} = 2.5$$

4. **Stock Consideration Shares Acquirer Issues (8.1.11)**

$$\text{Stock Consideration Shares Acquirer Issues} = \text{Acquiree Shares Outstanding} \times \text{Exchange Ratio (8.1.10)}$$

$$\text{Shares Acquirer Issues if threshold is met} = 100{,}000 \times 2.5 = 250{,}000$$

Notice that 50,000 additional shares needs to be issued because the stock price dropped from $50 to $40.

8.5 Consolidation Method: No Preacquisition Earnings

Example 57

Hoosier Engine (acquirer) purchased Michigan Automotive (acquiree) on 1/1/X5 for $750,000.
Hoosier Engine's consideration was 11,000 common stock shares at $5.00 par.
Hoosier acquired 60% of Michigan's outstanding common stock.
Immediately prior to acquisition:

Account	Hoosier Book Value	Michigan Book Value	Michigan Market Value
Cash and Receivables	920,000	75,700	85,000
Inventory	2,918,000	213,000	245,000
Land	742,000	165,600	195,000
Plant Assets (net)	2,826,000	793,000	975,000
Other Non-Current Assets	760,000	46,400	55,000
Current Liabilities	1,850,000	175,000	175,000
Long-Term Debt	3,270,000	300,000	280,000
Common Stock	91,000	59,800	
Additional Paid-In Capital	800,000	200,000	
Retained Earnings	2,155,000	558,900	

Prepare the purchase journal entry on 1/1/X5.
Prepare the elimination journal entry on 1/1/X5.
Prepare the consolidation trial balance on 1/1/X5.

Solution 57:

1. **Acquiree Equity (8.2.7)**

Acquiree Equity = + Common Stock at Par
+ Additional Paid-In Capital
+ Retained Earnings
+ Preacquisition Earnings Amount (8.2.6)
– Dividends

Acquiree Equity = 59,800 + 200,000 + 558,900 + 0 – 0 = 818,700

2. **Imputed Market Value (8.2.1)**

$$\text{Imputed Market Value} = \frac{\text{Stock Cost (7.2.1)}}{\text{Ownerhip Percentage (7.7.2)}}$$

$$\text{Imputed Market Value} = \frac{750{,}000}{0.60} = 1{,}250{,}000$$

3. **Non-Controlling Interest Amount (8.2.3)**

Non-Controlling Interest Amount = Imputed Market Value (8.2.1) – Stock Cost (7.2.1)

Non-Controlling Interest Amount = 1,250,000 – 750,000 = 500,000

4. **Purchase Differential (8.2.8)**

Purchase Differential = Imputed Market Value (8.2.1) – Acquiree Equity (8.2.7)

Purchase Differential = 1,250,000 – 818,700 = 431,300

5. **Total Fair/Book Difference (8.2.9)**

Let m = the number of acquiree's assets.
Let n = the number of acquiree's liabilities.

$$\text{Total Fair/Book Difference} = \sum_{i=1}^{m}(\text{Fair Value Asset}_i - \text{Book Value Asset}_i) - \sum_{i=1}^{n}(\text{Fair Value Liability}_i - \text{Book Value Liability}_i)$$

Total Fair/Book Difference Table (8.2.10)

Account	Debit	Credit
Asset_1	Fair Value Asset_1 – Book Value Asset_1	
Asset_2	Fair Value Asset_2 – Book Value Asset_2	
...		
Asset_m	Fair Value Asset_m – Book Value Asset_m	
Liability_1		Fair Value Liability_1 – Book Value Liability_1
Liability_2		Fair Value Liability_2 – Book Value Liability_2
...		
Liability_n		Fair Value Liability_n – Book Value Liability_n
Total Fair/Book Difference	(8.2.9)	

Note: if Fair Value_i – Book $\text{Value}_i < 0$ then record the absolute value of the difference in the opposite column.

Account	Debit	Credit
Cash and Receivables	85,000 – 75,700 = 9,300	
Inventory	245,000 – 213,000 = 32,000	
Land	195,000 – 165,600 = 29,400	
Plant Assets (net)	975,000 – 793,000 = 182,000	
Other Non-Current Assets	55,000 – 46,400 = 8,600	
Current Liabilities		175,000 – 175,000 = 0
Long-Term Debt	|280,000 – 300,000| = 20,000	
Total Fair/Book Difference	281,300	

6. **Goodwill Amount (8.2.11)**

Goodwill Amount = Purchase Differential (8.2.8) – Total Fair/Book Difference (8.2.9)

Goodwill Amount = 431,300 – 281,300 = 150,000

7. **Consolidation Purchase Journal Entry (8.2.14)**
Since Goodwill Amount (8.2.11) >= 0 then:

		Debit	Credit
XX/XX/XX	Investment in Subsidiary (8.1.9) (← an Asset)	Stock Cost (7.2.1)	
	Cash and/or Stock and/or Debt		Stock Cost (7.2.1)

		Debit	Credit
01/01/X5	Investment in Michigan Automotive	750,000	
	Common Stock (11,000 shares × $5.00 par)		55,000
	Additional Paid-In Capital		695,000

8. **Initial Purchase Elimination Journal Entry (8.2.15)**
To eliminate the permanent accounts:

		Debit	Credit
XX/XX/XX	Common Stock	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase Date
	Investment in Subsidiary$_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative Goodwill
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
01/01/X5	Common Stock	59,800	
	Additional Paid-In Capital	200,000	
	Retained Earnings	558,900	
	Goodwill	150,000	
	Investment in Michigan		750,000
	Non-Controlling Interest		500,000
	Cash and Receivables	9,300	
	Inventory	32,000	
	Land	29,400	
	Plant Assets (net)	182,000	
	Other Non-Current Assets	8,600	
	Long-Term Debt	20,000	
		1,250,000	1,250,000

9. **Consolidation Trial Balance Table (8.2.17) in thousands.**

	Hoosier		Michigan		Elimination		Consolidation	
Account	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Cash and Receivables	920.0		75.7		9.3		1,005.0	
Inventory	2,918.0		213.0		32.0		3,163.0	
Land	742.0		165.6		29.4		937.0	
Plant Assets (net)	2,826.0		793.0		182.0		3,801.0	
Other Non-Current Assets	760.0		46.4		8.6		815.0	
Investment in Michigan	750,000					750.0	0.0	
Goodwill					150.0		150.0	
Current Liabilities		1,850.0		175.0				2,025.0
Long-Term Debt		3,270.0		300.0	20.0			3,550.0
Common Stock		146.0		59.8	59.8			146.0
Additional Paid-In Capital		1,495.0		200.0	200.0			1,495.0
Retained Earnings		2,155.0		558.9	558.9			2,155.0
Non-Controlling Interest						500.0		500.0
Total	8,916.0	8,916.0	1,293.7	1,293.7	1,250.0	1,250.0	9,871.0	9,871.0

8.6 Consolidation Method: Preacquisition Earnings/100% Acquisition

Example 58
School Supply (acquirer) purchased Midwestern Book (acquiree) on 2/1/X5 for $1,108,000.
School Supply's consideration was 22,000 preferred stock shares at $20.00 par.

School Supply acquired 100% of Midwestern Book's outstanding common stock.
Immediately prior to acquisition:

Account	School's Book Value	Midwestern's Book Value	Midwestern's Market Value
Cash and Receivables	633,000	192,000	185,000
Inventory	2,501,000	414,000	410,000
Land	854,000	71,000	80,000
Plant Assets (net)	3,985,000	936,000	950,000
Other Non-Current Assets	213,000	58,000	45,000
Current Liabilities	1,600,000	223,000	223,000
Long-Term Debt	1,250,000	340,000	339,000
Sales	1,150,000	226,000	
Cost of Goods Sold	402,000	75,000	
Depreciation Expense	56,000	10,000	
Other Expenses	257,000	46,000	
Common Stock	22,900	87,000	
Additional Paid-In Capital	647,000	331,000	
Retained Earnings	4,231,100	595,000	

Prepare the purchase journal entry on 2/1/X5.
Prepare the elimination journal entry on 2/1/X5.
Prepare the consolidation trial balance on 2/1/X5.
Prepare the Statement Trial Balance (5.18.5) from the consolidated trial balance.

Solution 58:

1. **Preacquisition Earnings Amount (8.2.6)**

Preacquisition Earnings Amount =	+ $\sum_{i=1}^{n}$ Acquiree Revenue$_i$	226,000
	+ $\sum_{i=1}^{n}$ Acquiree Gain$_i$	0
	– $\sum_{i=1}^{n}$ Acquiree Expense$_i$	131,000
	– $\sum_{i=1}^{n}$ Acquiree Loss$_i$	0
Preacquisition Earnings Amount =		95,000

2. **Acquiree Equity (8.2.7)**

Acquiree Equity = + Common Stock at Par
+ Additional Paid-In Capital
+ Retained Earnings
+ Preacquisition Earnings Amount (8.2.6)
– Dividends
Acquiree Equity = 87,000 + 331,000 + 595,000 + 95,000 – 0 = 1,108,000

3. **Imputed Market Value (8.2.1)**

$$\text{Imputed Market Value} = \frac{\text{Stock Cost (7.2.1)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Imputed Market Value} = \frac{1{,}108{,}000}{1.00} = 1{,}108{,}000$$

4. **Non-Controlling Interest Amount (8.2.3)**

Non-Controlling Interest Amount = Imputed Market Value (8.2.1) –
Stock Cost (7.2.1)
Non-Controlling Interest Amount = 1,108,000 – 1,108,000 = 0

5. **Purchase Differential (8.2.8)**

Purchase Differential = Imputed Market Value (8.2.1) –
Acquiree Equity (8.2.7)
Purchase Differential = 1,108,000 – 1,188,000 = 0

6. **Total Fair/Book Difference (8.2.9)**

Let m = the number of acquiree's assets.
Let n = the number of acquiree's liabilities.
$$\text{Total Fair/Book Difference} = \sum_{i=1}^{m}(\text{Fair Value Asset}_i - \text{Book Value Asset}_i) - \sum_{i=1}^{n}(\text{Fair Value Liability}_i - \text{Book Value Liability}_i)$$

Total Fair/Book Difference Table (8.2.10)

Account	Debit	Credit
Asset_1	Fair Value Asset_1 – Book Value Asset_1	
Asset_2	Fair Value Asset_2 – Book Value Asset_2	
...		
Asset_m	Fair Value Asset_m – Book Value Asset_m	
Liability_1		Fair Value Liability_1 – Book Value Liability_1
Liability_2		Fair Value Liability_2 – Book Value Liability_2
...		
Liability_n		Fair Value Liability_n – Book Value Liability_n
Total Fair/Book Difference	(8.2.9)	

Note: if Fair Value_i – Book $\text{Value}_i < 0$ then record the absolute value of the difference in the opposite column.

Account	Debit	Credit
Cash and Receivables		|185,000 – 192,000| = 7,000
Inventory		|410,000 – 414,000| = 4,000
Land	80,000 – 71,600 = 9,000	
Plant Assets (net)	950,000 – 936,000 = 14,000	
Other Non-Current Assets		|45,000 – 58,000| = 13,000
Current Liabilities		223,000 – 223,000 = 0
Long-Term Debt	|339,000 – 340,000| = 1,000	
Total Fair/Book Difference	0	

7. **Goodwill Amount (8.2.11)**
   Goodwill Amount = Purchase Differential (8.2.8) –
   Total Fair/Book Difference (8.2.9)
   Goodwill Amount = 0 – 0 = 0

8. **Consolidation Purchase Journal Entry (8.2.14)**
   Since Goodwill Amount (8.2.11) >= 0 then:

		Debit	Credit
XX/XX/XX	Investment in Subsidiary (8.1.9) (← an Asset)	Stock Cost (7.2.1)	
	Cash and/or Stock and/or Debt		Stock Cost (7.2.1)

		Debit	Credit
02/01/X5	Investment in Midwestern Book	1,108,000	
	Preferred Stock (20,000 at $20)		440,000
	Additional Paid-In Preferred		668,000

9. **Initial Purchase Elimination Journal Entry (8.2.15)**
   To eliminate the permanent accounts:

		Debit	Credit
XX/XX/XX	Common Stock	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase Date
	Investment in $\text{Subsidiary}_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative Goodwill
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
02/01/X5	Common Stock	87,000	
	Additional Paid-In Capital	331,000	
	Retained Earnings	595,000	
	Preacquisition Earnings	95,000	
	Investment in Midwestern Book		1,108,000
	Cash and Receivables		7,000
	Inventory		4,000
	Land	9,000	
	Plant Assets (net)	14,000	
	Other Non-Current Assets		13,000
	Long-Term Debt	1,000	
		1,132,000	1,132,000

10. **Consolidation Trial Balance Table (8.2.17) in thousands.**

	School		Midwestern		Elimination		Consolidation	
Account	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Sales		1,150.0		226.0				1,376.0
Cost of Goods Sold	402.0		75.0				477.0	
Depreciation Expense	56.0		10.0				66.0	
Other Expenses	257.0		46.0				303.0	
Preacquisition Earnings					95.0		95.0	
Cash and Receivables	633.0		192.0			7.0	818.0	
Inventory	2,501.0		414.0			4.0	2,911.0	
Land	854.0		71.0		9.0		934.0	
Plant Assets (net)	3,985.0		936.0		14.0		4,935.0	
Other Non-Current Assets	213.0		58.0			13.0	258.0	
Investment in Midwestern Book	1,108.0					1,108.0		0.0
Current Liabilities		1,600.0		223.0				1,823.0
Long-Term Debt		1,250.0		340.0	1.0			1,589.0
Common Stock		22.9		87.0	87.0			22.9
Additional Paid-In Capital		647.0		331.0	331.0			647.0
Preferred Stock		440.0						440.0
Additional Paid-In Preferred		668.0						668.0
Retained Earnings		4,231.1		595.0	595.0			4,231.1
Total	10,009.0	10,009.0	1,802.0	1,802.0	1,132.0	1,132.0	10,797.0	10,797.0

11. **Pro-forma Net Income (5.18.1)**

Pro-forma Net Income = $+ \sum_{i=1}^{n}$ Net Revenue$_i$ Credit Balance
$- \sum_{i=1}^{n}$ Expense$_i$ Debit Balance
$+ \sum_{i=1}^{n}$ Gain$_i$ Credit Balance
$- \sum_{i=1}^{n}$ Loss$_i$ Debit Balance
– Preacquisition Earnings (8.2.5) Debit Balance

Account	Debit	Credit	Statement
Sales		1,376.0	
Cost of Goods Sold	477.0		
Depreciation Expenses	66.0		
Other Expenses	303.0		
Preacquisition Earnings	95.0		
Pro-forma Net Income			435.0 (5.18.1) (1)

12. **Book Value Equity (5.18.2)**

Book Value Equity = $\sum_{i=1}^{n}$ Equity$_i$ Credit Balance

Account	Debit	Credit	Statement
Common @ Par		22.9	
Additional Paid-in Capital		647.0	
Retained Earnings		4,231.1	
Preferred Stock @ Par		440.0	
Additional Paid-in Preferred		668.0	
Book Value Equity			6,009.0 (5.18.2) (6)

13. **Current Equity (5.18.3)**

Current Equity =	+ Book Value Equity (5.18.2)	6,009.0
	+ Pro-forma Net Income (5.18.1)	435.0
	– Dividends Declared Debit Balance	0.0
	+ Non-Controlling Interest (8.2.2)	0.0
Current Equity =		6,444.0

14. **Current Retained Earnings (5.18.4)**

Current Retained Earnings =	+ Pro-forma Net Income (5.18.1)	435.0
	+ Retained Earnings Credit Balance	4,231.1
	– Dividends Declared Debit Balance	0.0
Current Retained Earnings =		4666.1

15. **Statement Trial Balance (5.18.5) Template**

Account	Debit	Credit	Statement
Net Revenue$_1$		Amount$_1$	
...			
Expense$_1$	Amount$_1$		
...			
Gain$_1$		Amount$_1$	
...			
Loss$_1$	Amount$_1$		
...			
Preacquisition Earnings (8.2.5)	Amount		
Pro-forma Net Income			(5.18.1) (1)
Retained Earnings			Credit Balance (2)
Dividends Declared	Amount (3)		
Current Retained Earnings			(1) + (2) – (3) = (5.18.4)
Net Asset$_1$	Amount$_1$		
...			
Total Assets			$\sum_{i=1}^{n}$ Asset$_i$ (4)
Net Liability$_1$		Amount$_1$	
...			
Total Liabilities			$\sum_{i=1}^{n}$ Liability$_i$ (5)
Equity$_1$		Amount$_1$	
...			
Book Value Equity			(5.18.2) (6)
Pro-form Net Income			(5.18.1) (1)
Dividends Declared			-Debit Balance (3)
Non-Controlling Interest (8.2.2)		Amount (7)	
Current Equity			(6) + (1) – (3) + (7) = (5.18.3)
			(4) = (5) + (5.18.3)
	$\sum$	$\sum$	

16. **Statement Trial Balance (5.18.5) Presentation**

Account	Debit	Credit	Statement
Sales		1,376.0	
Cost of Goods Sold	477.0		
Depreciation Expenses	66.0		
Other Expenses	303.0		
Preacquisition Earnings	95.0		
Pro-forma Net Income			435.0
Retained Earnings			4,231.1
Current Retained Earnings			4,666.1
Cash and Receivables	818.0		
Inventory	2,911.0		
Land	934.0		
Plant Assets (net)	4,935.0		
Other Non-current Assets	258.0		
Total Assets			9,856.0
Current Liabilities		1,823.0	
Long-term Debt		1,589.0	
Total Liabilities			3,412.0
Common @ Par		22.9	
Additional Paid-in Capital		647.0	
Preferred Stock @ Par		440.0	
Additional Paid-in Preferred		668.0	
Retained Earnings		4,231.1	
Book Value Equity			6,009.0
Pro-form Net Income			435.0
Current Equity			6,444.0
	1,132.0	1,132.0	

8.7 Consolidation Method: Preacquisition Earnings/75% Acquisition

Example 59
School Supply (acquirer) purchased Midwestern Book (acquiree) on 2/1/X5 for $831,000.
School Supply's consideration was 16,500 preferred stock shares at $20.00 par.
School Supply acquired 75% of Midwestern Book's outstanding common stock.
Immediately prior to acquisition:

Account	School's Book Value	Midwestern's Book Value	Midwestern's Market Value
Cash and Receivables	633,000	192,000	185,000
Inventory	2,501,000	414,000	410,000
Land	854,000	71,000	80,000
Plant Assets (net)	3,985,000	936,000	950,000
Other Non-Current Assets	213,000	58,000	45,000
Current Liabilities	1,600,000	223,000	223,000
Long-Term Debt	1,250,000	340,000	339,000
Sales	1,150,000	226,000	
Cost of Goods Sold	402,000	75,000	
Depreciation Expense	56,000	10,000	
Other Expenses	257,000	46,000	
Common Stock	22,900	87,000	
Additional Paid-In Capital	647,000	331,000	
Retained Earnings	4,231,100	595,000	

Prepare the purchase journal entry on 2/1/X5.
Prepare the elimination journal entry on 2/1/X5.
Prepare the consolidation trial balance on 2/1/X5.
Prepare the Statement Trial Balance (5.18.5) from the consolidated trial balance.

Solution 59:

1. **Preacquisition Earnings Amount (8.2.6)**

Preacquisition Earnings Amount =	$+ \sum_{i=1}^{n}$ Acquiree Revenue$_i$	226,000
	$+ \sum_{i=1}^{n}$ Acquiree Gain$_i$	0
	$- \sum_{i=1}^{n}$ Acquiree Expense$_i$	131,000
	$- \sum_{i=1}^{n}$ Acquiree Loss$_i$	0
Preacquisition Earnings Amount =		95,000

2. **Acquiree Equity (8.2.7)**

Acquiree Equity = + Common Stock at Par
+ Additional Paid-In Capital
+ Retained Earnings
+ Preacquisition Earnings Amount (8.2.6)
– Dividends

Acquiree Equity = 87,000 + 331,000 + 595,000 + 95,000 – 0 = 1,108,000

3. **Imputed Market Value (8.2.1)**

$$\text{Imputed Market Value} = \frac{\text{Stock Cost (7.2.1)}}{\text{Ownership Percentage (7.7.2)}}$$

$$\text{Imputed Market Value} = \frac{831{,}000}{0.75} = 1{,}108{,}000$$

4. **Non-Controlling Interest Amount (8.2.3)**

Non-Controlling Interest Amount = Imputed Market Value (8.2.1) – Stock Cost (7.2.1)

Non-Controlling Interest Amount = 1,108,000 – 831,000 = 277,000

5. **Purchase Differential (8.2.8)**

Purchase Differential = Imputed Market Value (8.2.1) – Acquiree Equity (8.2.7)

Purchase Differential = 1,108,000 – 1,108,000 = 0

6. **Total Fair/Book Difference (8.2.9)**

Let m = the number of acquiree's assets.
Let n = the number of acquiree's liabilities.

$$\text{Total Fair/Book Difference} = \sum_{i=1}^{m}(\text{Fair Value Asset}_i - \text{Book Value Asset}_i) - \sum_{i=1}^{n}(\text{Fair Value Liability}_i - \text{Book Value Liability}_i)$$

Total Fair/Book Difference Table (8.2.10)

Account	Debit	Credit
Asset$_1$	Fair Value Asset$_1$ – Book Value Asset$_1$	
Asset$_2$	Fair Value Asset$_2$ – Book Value Asset$_2$	
...		
Asset$_m$	Fair Value Asset$_m$ – Book Value Asset$_m$	
Liability$_1$		Fair Value Liability$_1$ – Book Value Liability$_1$
Liability$_2$		Fair Value Liability$_2$ – Book Value Liability$_2$
...		
Liability$_n$		Fair Value Liability$_n$ – Book Value Liability$_n$
Total Fair/Book Difference	(8.2.9)	

Note: if Fair Value$_i$ – Book Value$_i$ < 0 then record the absolute value of the difference in the opposite column.

Account	Debit	Credit
Cash and Receivables		$\lvert 185{,}000 - 192{,}000 \rvert = 7{,}000$
Inventory		$\lvert 410{,}000 - 414{,}000 \rvert = 4{,}000$
Land	$80{,}000 - 71{,}600 = 9{,}000$	
Plant Assets (net)	$950{,}000 - 936{,}000 = 14{,}000$	
Other Non-Current Assets		$\lvert 45{,}000 - 58{,}000 \rvert = 13{,}000$
Current Liabilities		$223{,}000 - 223{,}000 = 0$
Long-Term Debt	$\lvert 339{,}000 - 340{,}000 \rvert = 1{,}000$	
Total Fair/Book Difference	0	

7. **Goodwill Amount (8.2.11)**
   Goodwill Amount = Purchase Differential (8.2.8) –
   Total Fair/Book Difference (8.2.9)
   Goodwill Amount = 0 – 0 = 0

8. **Consolidation Purchase Journal Entry (8.2.14)**
   Since Goodwill Amount (8.2.11) >= 0 then:

		Debit	Credit
XX/XX/XX	Investment in Subsidiary (8.1.9) (← an Asset)	Stock Cost (7.2.1)	
	Cash and/or Stock and/or Debt		Stock Cost (7.2.1)

		Debit	Credit
02/01/X5	Investment in Midwestern Book	831,000	
	Preferred Stock (16,500 at $20)		330,000
	Additional Paid-In Preferred		501,000

9. **Initial Purchase Elimination Journal Entry (8.2.15)**
   To eliminate the permanent accounts:

		Debit	Credit
XX/XX/XX	Common Stock	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase Date
	Investment in Subsidiary$_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative Goodwill
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
02/01/X5	Common Stock	87,000	
	Additional Paid-In Capital	331,000	
	Retained Earnings	595,000	
	Preacquisition Earnings	95,000	
	Investment in Midwestern Book		831,000
	Non-Controlling Interest		277,000
	Cash and Receivables		7,000
	Inventory		4,000
	Land	9,000	
	Plant Assets (net)	14,000	
	Other Non-Current Assets		13,000
	Long-Term Debt	1,000	
		1,132,000	1,132,000

10. **Consolidation Trial Balance Table (8.2.17) in thousands.**

	School		Midwestern		Elimination		Consolidation	
Account	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit
Sales		1,150.0		226.0				1,376.0
Cost of Goods Sold	402.0		75.0				477.0	
Depreciation Expense	56.0		10.0				66.0	
Other Expenses	257.0		46.0				303.0	
Preacquisition Earnings					95.0		95.0	
Cash and Receivables	633.0		192.0			7.0	818.0	
Inventory	2,501.0		414.0			4.0	2,911.0	
Land	854.0		71.0		9.0		934.0	
Plant Assets (net)	3,985.0		936.0		14.0		4,935.0	
Other Non-Current Assets	213.0		58.0			13.0	258.0	
Investment in Midwestern Book	831.0					831.0		0.0
Current Liabilities		1,600.0		223.0				1,823.0
Long-Term Debt		1,250.0		340.0	1.0			1,589.0
Common Stock		22.9		87.0	87.0			22.9
Additional Paid-In Capital		647.0		331.0	331.0			647.0
Preferred Stock		330.0						330.0
Additional Paid-In Preferred		501.0						501.0
Retained Earnings		4,231.1		595.0	595.0			4,231.1
Non-Controlling Interest						277.0		277.0
Total	9,732.0	9,732.0	1,802.0	1,802.0	1,132.0	1,132.0	10,797.0	10,797.0

11. **Pro-forma Net Income (5.18.1)**

Pro-forma Net Income = $+ \sum_{i=1}^{n}$ Net Revenue$_i$ Credit Balance
$- \sum_{i=1}^{n}$ Expense$_i$ Debit Balance
$+ \sum_{i=1}^{n}$ Gain$_i$ Credit Balance
$- \sum_{i=1}^{n}$ Loss$_i$ Debit Balance
– Preacquisition Earnings (8.2.5) Debit Balance

Account	Debit	Credit	Statement
Sales		1,376.0	
Cost of Goods Sold	477.0		
Depreciation Expenses	66.0		
Other Expenses	303.0		
Preacquisition Earnings	95.0		
Pro-forma Net Income			435.0 (5.18.1) (1)

12. **Book Value Equity (5.18.2)**

Book Value Equity = $\sum_{i=1}^{n}$ Equity$_i$ Credit Balance

Account	Debit	Credit	Statement
Common @ Par		22.9	
Additional Paid-in Capital		647.0	
Retained Earnings		4,231.1	
Preferred Stock @ Par		330.0	
Additional Paid-in Preferred		501.0	
Book Value Equity			5,732.0 (5.18.2) (6)

13. **Current Equity (5.18.3)**

Current Equity = + Book Value Equity (5.18.2)	5,732.0
+ Pro-forma Net Income (5.18.1)	435.0
– Dividends Declared Debit Balance	0.0
+ Non-Controlling Interest (8.2.2)	277.0
Current Equity =	6,444.0

14. **Current Retained Earnings (5.18.4)**

Current Retained Earnings = + Pro-forma Net Income (5.18.1)	435.0
+ Retained Earnings Credit Balance	4,231.1
– Dividends Declared Debit Balance	0.0
Current Retained Earnings =	4666.1

15. **Statement Trial Balance (5.18.5) Template**

Account	Debit	Credit	Statement
Net Revenue$_1$		Amount$_1$	
...			
Expense$_1$	Amount$_1$		
...			
Gain$_1$		Amount$_1$	
...			
Loss$_1$	Amount$_1$		
...			
Preacquisition Earnings (8.2.5)	Amount		
Pro-forma Net Income			(5.18.1) (1)
Retained Earnings			Credit Balance (2)
Dividends Declared	Amount (3)		
Current Retained Earnings			(1) + (2) – (3) = (5.18.4)
Net Asset$_1$	Amount$_1$		
...			
Total Assets			$\sum_{i=1}^{n}$ Asset$_i$ (4)
Net Liability$_1$		Amount$_1$	
...			
Total Liabilities			$\sum_{i=1}^{n}$ Liability$_i$ (5)
Equity$_1$		Amount$_1$	
...			
Book Value Equity			(5.18.2) (6)
Pro-form Net Income			(5.18.1) (1)
Dividends Declared			-Debit Balance (3)
Non-Controlling Interest (8.2.2)		Amount (7)	
Current Equity			(6) + (1) – (3) + (7) = (5.18.3)
			(4) = (5) + (5.18.3)
	$\sum$	$\sum$	

16. **Statement Trial Balance (5.18.5) Presentation**

Account	Debit	Credit	Statement
Sales		1,376.0	
Cost of Goods Sold	477.0		
Depreciation Expenses	66.0		
Other Expenses	303.0		
Preacquisition Earnings	95.0		
Pro-forma Net Income			435.0
Retained Earnings			4,231.1
Current Retained Earnings			4,666.1
Cash and Receivables	818.0		
Inventory	2,911.0		
Land	934.0		
Plant Assets (net)	4,935.0		
Other Non-current Assets	258.0		
Total Assets			9,856.0
Current Liabilities		1,823.0	
Long-term Debt		1,589.0	
Total Liabilities			3,412.0
Common @ Par		22.9	
Additional Paid-in Capital		647.0	
Preferred Stock @ Par		330.0	
Additional Paid-in Preferred		501.0	
Retained Earnings		4,231.1	
Book Value Equity			5,732.0
Pro-form Net Income			435.0
Non-Controlling Interest		277.0	
Current Equity			6,444.0
	1,132.0	1,132.0	

8.8 Consolidation Method: Subsequent Earnings/100% Acquisition

Example 60

WorldWide (acquirer) purchased Import/Export (acquiree) on 10/1/X5 for $5,604,000 cash.
WorldWide acquired 100% of Import/Export's outstanding common stock.
Immediately prior to acquisition:

Import/Export 10/1/X5	Book Value	Market Value	Remaining Life
Cash	125,000	125,000	
Accounts Receivable (net)	350,000	350,000	
Inventory	1,750,000	1,850,000	8 months
Land	1,520,000	1,520,000	
Plant and Equipment (net)	4,799,000	4,739,000	10 years
Other Non-current Assets	160,000	120,000	40 months
Cost of Goods Sold	850,000		
Depreciation Expenses	300,000		
Other Expenses	275,000		
Dividends	50,000		
Total	10,179,000		
Current Liabilities	1,100,000	1,100,000	
Long-Term Debt	2,000,000	2,000,000	
Common Stock @ Par	230,000		
Additional Paid-in Capital	1,624,000		
Retained Earnings	3,425,000		
Sales Revenue	1,800,000		
Total	10,179,000		

At 12/31/X5:

Account	WorldWide	Import/Export
Cash	3,750,000	162,000
Accounts Receivable (net)	5,240,000	410,000
Inventory	13,759,000	1,990,000
Land	3,200,000	1,520,000
Plant and Equipment (net)	28,368,000	4,777,000
Investment in Import/Export	5,706,000	
Other Non-current Assets	159,000	130,000
Cost of Goods Sold	18,450,000	1,350,000
Depreciation Expenses	750,000	450,000
Other Expenses	2,049,000	460,000
Dividends	350,000	80,000
Total	81,781,000	11,329,000
Current Liabilities	13,000,000	1,250,000
Long-Term Debt	18,500,000	2,000,000
Common Stock @ Par	600,000	230,000
Additional Paid-in Capital	2,243,000	1,624,000
Retained Earnings	15,600,000	3,425,000
Sales Revenue	31,706,000	2,800,000
Investment Income	132,000	
Total	81,781,000	11,329,000

Prepare the elimination journal entry on 12/31/X5.

Solution 60:

1. **Imputed Market Value (8.2.1)**

   $$\text{Imputed Market Value} = \frac{\text{Stock Cost (7.2.1) or (8.1.12)}}{\text{Ownership Percentage (7.7.2)}}$$

   $$\text{Imputed Market Value} = \frac{5{,}604{,}000}{1.0} = 5{,}604{,}000$$

2. **Non-Controlling Interest Amount (8.2.3)**

   $$\text{Non-Controlling Interest Amount} = \text{Imputed Market Value (8.2.1)} - \text{Stock Cost (7.2.1) or (8.1.12)}$$

   $$\text{Non-Controlling Interest Amount} = 5{,}604{,}000 - 5{,}604{,}000 = 0$$

3. **Preacquisition Earnings Amount (8.2.6)**

   $$\begin{aligned} \text{Preacquisition Earnings Amount} = &+ \textstyle\sum_{i=1}^{n} \text{Acquiree Revenue}_i && 1{,}800{,}000 \\ &+ \textstyle\sum_{i=1}^{n} \text{Acquiree Gain}_i && 0 \\ &- \textstyle\sum_{i=1}^{n} \text{Acquiree Expense}_i && 1{,}425{,}000 \\ &- \textstyle\sum_{i=1}^{n} \text{Acquiree Loss}_i && 0 \\ \text{Preacquisition Earnings Amount} = & && 375{,}000 \end{aligned}$$

4. **Acquiree Equity (8.2.7)**

   $$\begin{aligned} \text{Acquiree Equity} = &+ \text{Common Stock at Par} \\ &+ \text{Additional Paid-In Capital} \\ &+ \text{Retained Earnings} \\ &+ \text{Preacquisition Earnings Amount (8.2.6)} \\ &- \text{Dividends} \end{aligned}$$

   $$\text{Acquiree Equity} = 230{,}000 + 1{,}624{,}000 + 3{,}425{,}000 + 375{,}000 - 50{,}000 = 5{,}604{,}000$$

5. **Purchase Differential (8.2.8)**

   $$\text{Purchase Differential} = \text{Imputed Market Value (8.2.1)} - \text{Acquiree Equity (8.2.7)}$$

   $$\text{Purchase Differential} = 5{,}604{,}000 - 5{,}604{,}000 = 0$$

6. **Total Fair/Book Difference (8.2.9)**

   Let m = the number of acquiree's assets.

   Let n = the number of acquiree's liabilities.

   $$\begin{aligned} \text{Total Fair/Book Difference} = &\textstyle\sum_{i=1}^{m}(\text{Fair Value Asset}_i - \text{Book Value Asset}_i) - \\ &\textstyle\sum_{i=1}^{n}(\text{Fair Value Liability}_i - \text{Book Value Liability}_i) \end{aligned}$$

Total Fair/Book Difference Table (8.2.10)

Account	Debit	Credit
Asset_1	Fair Value Asset_1 – Book Value Asset_1	
Asset_2	Fair Value Asset_2 – Book Value Asset_2	
...		
Asset_m	Fair Value Asset_m – Book Value Asset_m	
Liability_1		Fair Value Liability_1 – Book Value Liability_1
Liability_2		Fair Value Liability_2 – Book Value Liability_2
...		
Liability_n		Fair Value Liability_n – Book Value Liability_n
Total Fair/Book Difference	(8.2.9)	

Note: if Fair Value_i – Book $\text{Value}_i < 0$ then record the absolute value of the difference in the opposite column.

Account	Debit	Credit
Inventory	1,850,000 – 1,750,000 = 100,000	
Plant and Equipment (net)		|4,739,000 – 4,799,000| = 60,000
Other Non-Current Assets		|120,000 – 160,000| = 40,000
Total Fair/Book Difference	0	

7. **Goodwill Amount (8.2.11)**
   Goodwill Amount = Purchase Differential (8.2.8) –
   Total Fair/Book Difference (8.2.9)
   Goodwill Amount = 0 – 0 = 0

8. **Consolidation Purchase Journal Entry (8.2.14)**
   Since Goodwill Amount (8.2.11) >= 0 then:

		Debit	Credit
XX/XX/XX	Investment in $\text{Subsidiary}_{security}$ (8.1.9)	Stock Cost (7.2.1) or (8.1.12)	
	Cash and/or Stock and/or Debt		(7.2.1) or (8.1.12)

		Debit	Credit
10/01/X5	Investment in Import/Export	5,604,000	
	Cash		5,604,000

9. **Consolidation Method: Post-Acquisition Net Income (8.3.1)**
   Apply the Equity Investment: Post-Acquisition Net Income (7.7.6).

Subsidiary Annual Earnings Amount = $+ \sum_{i=1}^{n}$ Subsidiary Revenue_i	2,800,000
$+ \sum_{i=1}^{n}$ Subsidiary Gain_i	0
$- \sum_{i=1}^{n}$ Subsidiary Expense_i	2,260,000
$- \sum_{i=1}^{n}$ Subsidiary Loss_i	0
Subsidiary Annual Earnings Amount =	540,000

   Post-Acquisition Net Income = Subsidiary Annual Earning Amount –
   Preacquisition Earnings (8.2.6)
   Post-Acquisition Net Income = 540,000 – 375,000 = 165,000

10. **Consolidation Method: Net Income Realization Amount (8.3.2)**
    Apply the Equity Investment: Net Income Realization Amount (7.7.7).
    Since Acquiree's Extraordinary Items = 0 and
    Since Acquiree's Discontinued Operations = 0 then:
    Net Income Realization Amount = Acquiree Post-Acquisition Net Income (7.7.6) or (8.3.1) ×
    Ownership Percentage (7.7.2)
    Net Income Realization Amount = 165,000 × 1.0 = 165,000
    Journal Entry

		Debit	Credit
12/31/XX	Investment in $\text{Subsidiary}_{security}$ (7.7.1)	(7.7.7)	
	Investment Revenue (7.2.4)		(7.7.7)

		Debit	Credit
12/31/X5	Investment in Import/Export	165,000	
	Investment Revenue		165,000

11. **Consolidation Method: Dividend Realization Amount (8.3.6)**
Apply the Equity Investment: Majority Dividend Realization Amount (7.7.11).
Majority Dividend Realization Amount = Acquiree's Dividends Declared × Ownership Percentage (7.7.2)
Majority Dividend Realization Amount = (80,000 – 50,000) × 1.0 = 30,000
Journal Entry

		Debit	Credit
12/31/XX	Cash or Dividends Receivable	(7.7.11)	
	Investment in Subsidiary$_{security}$ (7.7.1)		(7.7.11)

		Debit	Credit
12/31/X5	Cash	30,000	
	Investment in Import/Export		30,000

12. **Depreciatable Assets Premium/(Discount) (7.7.12)**
Depreciatable Assets Premium/(Discount) = Acquiree's Depreciatable Assets Fair Value – Acquiree's Depreciatable Assets Book Value
Depreciatable Assets Premium/(Discount) = 4,739,000 – 4,799,000 = -60,000

13. **Consolidation Method: Depreciation Realization Amount (8.3.7)**
Apply the Equity Investment: Depreciation Realization Amount (7.7.13).
Since Depreciatable Assets Premium/(Discount) (7.7.12) <> 0 then:
Depreciation Realization Amount = $\frac{\text{Depreciatable Assets Premium/(Discount) (7.7.12)} \times \text{Ownership Percentage (7.7.2)}}{\text{Estimated Average Useful Years}} \times$ Percentage of Year Held (7.7.5)
Depreciation Realization Amount = $\frac{\text{-60,000} \times 1.0}{10} \times \frac{3}{12}$ = -1,500
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.13)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.13)

		Debit	Credit
12/31/X5	Investment in Import/Export	1,500	
	Investment Revenue		1,500

14. **Other Assets Premium/(Discount) (7.7.14)**
Other Assets Premium/(Discount) = Acquiree's Other Assets Fair Value – Acquiree's Other Assets Book Value
Other Assets Premium/(Discount) = 120,000 – 160,000 = -40,000

15. **Consolidation Method: Other Amortization Realization Amount (8.3.8)**
Apply the Equity Investment: Other Amortization Realization Amount (7.7.15).
Since Other Assets Premium/(Discount) (7.7.14) <> 0 then:
Other Amortization Realization Amount = $\frac{\text{Other Assets Premium/(Discount) (7.7.14)} \times \text{Ownership Percentage (7.7.2)}}{\text{Estimated Average Useful Months}} \times$ Number of remaining months
Other Amortization Realization Amount = $\frac{\text{-40,000} \times 1.0}{40} \times 3$ = -3,000
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.15)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.15)

		Debit	Credit
12/31/X5	Investment in Import/Export	3,000	
	Investment Revenue		3,000

16. **Equity Investment: Inventory Premium/(Discount) (7.7.18)**
Inventory Premium/(Discount) = Acquiree's Inventory Fair Value – Acquiree's Inventory Book Value

Inventory Premium/(Discount) = 1,850,000 – 1,750,000 = 100,000

17. **Consolidation Method: Inventory Realization Amount (8.3.10)**
Apply the Equity Investment: Inventory Realization Amount (7.7.19).
Since Inventory Premium/(Discount) (7.7.18) <> 0 then:
Inventory Realization Amount = Inventory Premium (7.7.18) ×
Ownership Percentage (7.7.2) ×
Percentage of Original Inventory Sold During Year
Inventory Realization Amount = 100,000 × 1.0 × $\frac{3}{8}$ = 37,500
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.19)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.19)

		Debit	Credit
12/31/X5	Investment Revenue	37,500	
	Investment in Import/Export		37,000

18. **Subsidiary Depreciation Realization Amount (8.3.11)**
Since Depreciatable Assets Premium/(Discount) (7.7.12) <> 0 then:
$$\text{Subsidiary Depreciation Realization Amount} = \frac{\text{Depreciation Realization Amount (7.7.13)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Depreciation Realization Amount} = \frac{\text{-1,500}}{1.0} = \text{-1,500}$$

19. **Subsidiary Other Amortization Realization Amount (8.3.13)**
Since Other Assets Premium/(Discount) (7.7.14) <> 0 then:
$$\text{Subsidiary Other Amortization Realization Amount} = \frac{\text{Other Amortization Realization Amount (7.7.15)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Other Amortization Realization Amount} = \frac{\text{-3,000}}{1.0} = \text{-3,000}$$

20. **Subsidiary Inventory Realization Amount (8.3.14)**
Since Inventory Premium/(Discount) (7.7.18) <> 0 then:
$$\text{Subsidiary Inventory Realization Amount} = \frac{\text{Inventory Realization Amount (7.7.19)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Inventory Realization Amount} = \frac{37{,}500}{1.0} = 37{,}500$$

21. **Subsidiary Investment Income (8.3.15)**
Subsidiary Investment Income = + Subsidiary Post-Acquisition Net Income (8.3.1)
– Subsidiary Depreciation Realization Amount (8.3.11)
– Subsidiary Other Amortization Realization Amount (8.3.13)
– Subsidiary Inventory Realization Amount (8.3.14)
Subsidiary Investment Income = 165,000 – -1,500 – -3,000 – 37,500 = 132,000

22. **Majority Investment Income (8.3.16)**
Majority Investment Income = Subsidiary Investment Income (8.3.15) ×
Ownership Percentage (7.7.2)
Majority Investment Income = 132,000 × 1.0 = 132,000

23. **Initial Purchase Elimination Journal Entry (8.2.15)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).

		Debit	Credit
XX/XX/XX	Common Stock	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase Date
	Investment in Subsidiary$_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative Goodwill
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
12/31/X5	Common Stock	230,000	
	Additional Paid-In Capital	1,624,000	
	Retained Earnings	3,425,000	
	Preacquisition Earnings	375,000	
	Dividends		50,000
	Investment in Import/Export		5,604,000
	Inventory	100,000	
	Plant and Equipment (net)		60,000
	Other Non-current Assets		40,000
	Total	5,754,000	5,754,000

24. **Subsequent Subsidiary Activities Elimination Journal Entry (8.3.18)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
Elimination Journal Entry: Subsidiary Activities

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(8.3.16)	
	Dividends (← a Contra-Equity Account)		(7.7.11)
	Investment in Subsidiary$_{security}$ (8.1.9)		(8.3.16) – (7.7.11)

		Debit	Credit
12/31/X5	Investment Revenue	132,000	
	Dividends		30,000
	Investment in Import/Export		102,000

25. **Amortize Differentials Elimination Journal Entry (8.3.19)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9). Note: if the adjustment is negative, then reverse the journal entry.
Elimination Journal Entry: Depreciation Amount

		Debit	Credit
12/31/XX	Depreciation Expense	(8.3.11)	
	PP&E		(8.3.11)

Elimination Journal Entry: Amortization Amount

		Debit	Credit
12/31/XX	Other Expense	(8.3.13)	
	Other Assets		(8.3.13)

Elimination Journal Entry: Inventory Realization Amount

		Debit	Credit
12/31/XX	Cost of Goods Sold	(8.3.14)	
	Inventory		(8.3.14)

Elimination Journal Entry, If Goodwill Impairment Amount (8.3.17) $>$ 0 then:

		Debit	Credit
12/31/XX	Impairment Loss	(8.3.17)	
	Goodwill		(8.3.17)

Elimination Journal Entry: Depreciation Amount

		Debit	Credit
12/31/X5	Plant and Equipment (net)	1,500	
	Depreciation Expense		1,500

Elimination Journal Entry: Amortization Amount

		Debit	Credit
12/31/X5	Other Assets	3,000	
	Other Expense		3,000

Elimination Journal Entry: Inventory Realization Amount

		Debit	Credit
12/31/X5	Cost of Goods Sold	37,500	
	Inventory		37,500

8.9 Consolidation Method: Subsequent Earnings/75% Acquisition

Example 61

WorldWide (acquirer) purchased Import/Export (acquiree) on 10/1/X5 for $4,203,000 cash.
WorldWide acquired 75% of Import/Export's outstanding common stock.
Immediately prior to acquisition:

Import/Export 10/1/X5	Book Value	Market Value	Remaining Life
Cash	125,000	125,000	
Accounts Receivable (net)	350,000	350,000	
Inventory	1,750,000	1,850,000	8 months
Land	1,520,000	1,520,000	
Plant and Equipment (net)	4,799,000	4,739,000	10 years
Other Non-current Assets	160,000	120,000	40 months
Cost of Goods Sold	850,000		
Depreciation Expenses	300,000		
Other Expenses	275,000		
Dividends	50,000		
Total	10,179,000		
Current Liabilities	1,100,000	1,100,000	
Long-Term Debt	2,000,000	2,000,000	
Common Stock @ Par	230,000		
Additional Paid-in Capital	1,624,000		
Retained Earnings	3,425,000		
Sales Revenue	1,800,000		
Total	10,179,000		

At 12/31/X5:

Account	WorldWide	Import/Export
Cash	3,750,000	162,000
Accounts Receivable (net)	5,240,000	410,000
Inventory	13,759,000	1,990,000
Land	3,200,000	1,520,000
Plant and Equipment (net)	28,368,000	4,777,000
Investment in Import/Export	5,706,000	
Other Non-current Assets	159,000	130,000
Cost of Goods Sold	18,450,000	1,350,000
Depreciation Expenses	750,000	450,000
Other Expenses	2,049,000	460,000
Dividends	350,000	80,000
Total	81,781,000	11,329,000
Current Liabilities	13,000,000	1,250,000
Long-Term Debt	18,500,000	2,000,000
Common Stock @ Par	600,000	230,000
Additional Paid-in Capital	2,243,000	1,624,000
Retained Earnings	15,600,000	3,425,000
Sales Revenue	31,706,000	2,800,000
Investment Income	132,000	
Total	81,781,000	11,329,000

Prepare the elimination journal entry on 12/31/X5.

Solution 61:

1. **Imputed Market Value (8.2.1)**

$$\text{Imputed Market Value} = \frac{\text{Stock Cost (7.2.1) or (8.1.12)}}{\text{Ownership Percentage (7.7.2)}}$$

$$\text{Imputed Market Value} = \frac{4{,}203{,}000}{0.75} = 5{,}604{,}000$$

2. **Non-Controlling Interest Amount (8.2.3)**

Non-Controlling Interest Amount = Imputed Market Value (8.2.1) –
Stock Cost (7.2.1) or (8.1.12)
Non-Controlling Interest Amount = 5,604,000 – 4,203,000 = 1,401,000

3. **Preacquisition Earnings Amount (8.2.6)**

Preacquisition Earnings Amount =	+ $\sum_{i=1}^{n}$ Acquiree Revenue$_i$	1,800,000
	+ $\sum_{i=1}^{n}$ Acquiree Gain$_i$	0
	– $\sum_{i=1}^{n}$ Acquiree Expense$_i$	1,425,000
	– $\sum_{i=1}^{n}$ Acquiree Loss$_i$	0
Preacquisition Earnings Amount =		375,000

4. **Acquiree Equity (8.2.7)**

Acquiree Equity = + Common Stock at Par
+ Additional Paid-In Capital
+ Retained Earnings
+ Preacquisition Earnings Amount (8.2.6)
– Dividends
Acquiree Equity = 230,000 + 1,624,000 + 3,425,000 + 375,000 – 50,000 = 5,604,000

5. **Purchase Differential (8.2.8)**

Purchase Differential = Imputed Market Value (8.2.1) –
Acquiree Equity (8.2.7)
Purchase Differential = 5,604,000 – 5,604,000 = 0

6. **Total Fair/Book Difference (8.2.9)**

Let m = the number of acquiree's assets.
Let n = the number of acquiree's liabilities.
Total Fair/Book Difference = $\sum_{i=1}^{m}$(Fair Value Asset$_i$ − Book Value Asset$_i$) –
$\sum_{i=1}^{n}$(Fair Value Liability$_i$ − Book Value Liability$_i$)

Total Fair/Book Difference Table (8.2.10)

Account	Debit	Credit
Asset$_1$	Fair Value Asset$_1$ – Book Value Asset$_1$	
Asset$_2$	Fair Value Asset$_2$ – Book Value Asset$_2$	
...		
Asset$_m$	Fair Value Asset$_m$ – Book Value Asset$_m$	
Liability$_1$		Fair Value Liability$_1$ – Book Value Liability$_1$
Liability$_2$		Fair Value Liability$_2$ – Book Value Liability$_2$
...		
Liability$_n$		Fair Value Liability$_n$ – Book Value Liability$_n$
Total Fair/Book Difference	(8.2.9)	

Note: if Fair Value$_i$ – Book Value$_i$ < 0 then record the absolute value of the difference in the opposite column.

Account	Debit	Credit
Inventory	1,850,000 – 1,750,000 = 100,000	
Plant and Equipment (net)		|4,739,000 – 4,799,000| = 60,000
Other Non-Current Assets		|120,000 – 160,000| = 40,000
Total Fair/Book Difference	0	

7. **Goodwill Amount (8.2.11)**

Goodwill Amount = Purchase Differential (8.2.8) –
Total Fair/Book Difference (8.2.9)
Goodwill Amount = 0 – 0 = 0

8. **Consolidation Purchase Journal Entry (8.2.14)**
Since Goodwill Amount (8.2.11) >= 0 then:

		Debit	Credit
XX/XX/XX	Investment in Subsidiary$_{security}$ (8.1.9)	Stock Cost (7.2.1) or (8.1.12)	
	Cash and/or Stock and/or Debt		(7.2.1) or (8.1.12)

		Debit	Credit
10/01/X5	Investment in Import/Export	4,203,000	
	Cash		4,203,000

9. **Consolidation Method: Post-Acquisition Net Income (8.3.1)**
Apply the Equity Investment: Post-Acquisition Net Income (7.7.6).

Subsidiary Annual Earnings Amount =	$+ \sum_{i=1}^{n}$ Subsidiary Revenue$_i$	2,800,000
	$+ \sum_{i=1}^{n}$ Subsidiary Gain$_i$	0
	$- \sum_{i=1}^{n}$ Subsidiary Expense$_i$	2,260,000
	$- \sum_{i=1}^{n}$ Subsidiary Loss$_i$	0
Subsidiary Annual Earnings Amount =		540,000

Post-Acquisition Net Income = Subsidiary Annual Earning Amount – Preacquisition Earnings (8.2.6)
Post-Acquisition Net Income = 540,000 – 375,000 = 165,000

10. **Consolidation Method: Net Income Realization Amount (8.3.2)**
Apply the Equity Investment: Net Income Realization Amount (7.7.7).
Since Acquiree's Extraordinary Items = 0 and
Since Acquiree's Discontinued Operations = 0 then:
Net Income Realization Amount = Acquiree Post-Acquisition Net Income (7.7.6) or (8.3.1) × Ownership Percentage (7.7.2)
Net Income Realization Amount = 165,000 × 0.75 = 123,750
Journal Entry

		Debit	Credit
12/31/XX	Investment in Subsidiary$_{security}$ (7.7.1)	(7.7.7)	
	Investment Revenue (7.2.4)		(7.7.7)

		Debit	Credit
12/31/X5	Investment in Import/Export	123,750	
	Investment Revenue		123,750

11. **Consolidation Method: Dividend Realization Amount (8.3.6)**
Apply the Equity Investment: Majority Dividend Realization Amount (7.7.11).
Majority Dividend Realization Amount = Acquiree's Dividends Declared × Ownership Percentage (7.7.2)
Majority Dividend Realization Amount = (80,000 – 50,000) × 0.75 = 22,500
Journal Entry

		Debit	Credit
12/31/XX	Cash or Dividends Receivable	(7.7.11)	
	Investment in Subsidiary$_{security}$ (7.7.1)		(7.7.11)

		Debit	Credit
12/31/X5	Cash	22,500	
	Investment in Import/Export		22,500

12. **Depreciatable Assets Premium/(Discount) (7.7.12)**
Depreciatable Assets Premium/(Discount) = Acquiree's Depreciatable Assets Fair Value – Acquiree's Depreciatable Assets Book Value
Depreciatable Assets Premium/(Discount) = 4,739,000 – 4,799,000 = -60,000

13. **Consolidation Method: Depreciation Realization Amount (8.3.7)**
Apply the Equity Investment: Depreciation Realization Amount (7.7.13).
Since Depreciatable Assets Premium/(Discount) (7.7.12) <> 0 then:
Depreciation Realization Amount =
$$\frac{\text{Depreciatable Assets Premium/(Discount) (7.7.12)} \times \text{Ownership Percentage (7.7.2)}}{\text{Estimated Average Useful Years}} \times$$
Percentage of Year Held (7.7.5)
Depreciation Realization Amount = $\frac{\text{-60,000} \times 0.75}{10} \times \frac{3}{12}$ = -1,125
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.13)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.13)

		Debit	Credit
12/31/X5	Investment in Import/Export	1,125	
	Investment Revenue		1,125

14. **Other Assets Premium/(Discount) (7.7.14)**
Other Assets Premium/(Discount) = Acquiree's Other Assets Fair Value – Acquiree's Other Assets Book Value
Other Assets Premium/(Discount) = 120,000 – 160,000 = -40,000

15. **Consolidation Method: Other Amortization Realization Amount (8.3.8)**
Apply the Equity Investment: Other Amortization Realization Amount (7.7.15).
Since Other Assets Premium/(Discount) (7.7.14) <> 0 then:
$$\text{Other Amortization Realization Amount} = \frac{\text{Other Assets Premium/(Discount) (7.7.14)} \times \text{Ownership Percentage (7.7.2)}}{\text{Estimated Average Useful Months}} \times \text{Number of remaining months}$$
$$\text{Other Amortization Realization Amount} = \frac{\text{-40,000} \times 0.75}{40} \times 3 = \text{-2,250}$$
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.15)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.15)

		Debit	Credit
12/31/X5	Investment in Import/Export	2,250	
	Investment Revenue		2,250

16. **Equity Investment: Inventory Premium/(Discount) (7.7.18)**
Inventory Premium/(Discount) = Acquiree's Inventory Fair Value – Acquiree's Inventory Book Value
Inventory Premium/(Discount) = 1,850,000 – 1,750,000 = 100,000

17. **Consolidation Method: Inventory Realization Amount (8.3.10)**
Apply the Equity Investment: Inventory Realization Amount (7.7.19).
Since Inventory Premium/(Discount) (7.7.18) <> 0 then:
Inventory Realization Amount = Inventory Premium (7.7.18) × Ownership Percentage (7.7.2) × Percentage of Original Inventory Sold During Year
$$\text{Inventory Realization Amount} = 100{,}000 \times 0.75 \times \frac{3}{8} = 28{,}125$$
Journal Entry

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(7.7.19)	
	Investment in Subsidiary$_{security}$ (8.1.9)		(7.7.19)

		Debit	Credit
12/31/X5	Investment Revenue	28,125	
	Investment in Import/Export		28,125

18. **Subsidiary Depreciation Realization Amount (8.3.11)**
Since Depreciatable Assets Premium/(Discount) (7.7.12) <> 0 then:
$$\text{Subsidiary Depreciation Realization Amount} = \frac{\text{Depreciation Realization Amount (7.7.13)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Depreciation Realization Amount} = \frac{\text{-1,125}}{0.75} = \text{-1,500}$$

19. **Subsidiary Other Amortization Realization Amount (8.3.13)**
Since Other Assets Premium/(Discount) (7.7.14) <> 0 then:
$$\text{Subsidiary Other Amortization Realization Amount} = \frac{\text{Other Amortization Realization Amount (7.7.15)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Other Amortization Realization Amount} = \frac{\text{-2,250}}{0.75} = \text{-3,000}$$

20. **Subsidiary Inventory Realization Amount (8.3.14)**
Since Inventory Premium/(Discount) (7.7.18) <> 0 then:
$$\text{Subsidiary Inventory Realization Amount} = \frac{\text{Inventory Realization Amount (7.7.19)}}{\text{Ownership Percentage (7.7.2)}}$$
$$\text{Subsidiary Inventory Realization Amount} = \frac{28{,}125}{0.75} = 37{,}500$$

21. **Subsidiary Investment Income (8.3.15)**
Subsidiary Investment Income = + Subsidiary Post-Acquisition Net Income (8.3.1)
– Subsidiary Depreciation Realization Amount (8.3.11)
– Subsidiary Other Amortization Realization Amount (8.3.13)
– Subsidiary Inventory Realization Amount (8.3.14)
Subsidiary Investment Income = 165,000 – -1,500 – -3,000 – 37,500 = 132,000

22. **Majority Investment Income (8.3.16)**
Majority Investment Income = Subsidiary Investment Income (8.3.15) ×
Ownership Percentage (7.7.2)
Majority Investment Income = 132,000 × 0.75 = 99,000

23. **Minority Investment Income (8.3.20)**
Minority Investment Income = Subsidiary Investment Income (8.3.15) ×
[1 – Ownership Percentage (7.7.2)]
Minority Investment Income = 132,000 × (1 – 0.75) = 33,000

24. **Minority Dividend Realization Amount (8.3.21)**
Minority Dividend Realization Amount = Acquiree's Dividends Declared ×
[1 – Ownership Percentage (7.7.2)]
Minority Dividend Realization Amount = (80,000 – 50,000) × (1 – 0.75) = 7,500

25. **Initial Purchase Elimination Journal Entry (8.2.15)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).

		Debit	Credit
XX/XX/XX	Common Stock	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase Date
	Investment in Subsidiary$_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative Goodwill
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
12/31/X5	Common Stock	230,000	
	Additional Paid-In Capital	1,624,000	
	Retained Earnings	3,425,000	
	Preacquisition Earnings	375,000	
	Dividends		50,000
	Investment in Import/Export		4,203,000
	Non-Controlling Interest		1,402,000
	Inventory	100,000	
	Plant and Equipment (net)		60,000
	Other Non-current Assets		40,000
	Total	5,754,000	5,754,000

26. **Subsequent Subsidiary Activities Elimination Journal Entry (8.3.18)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
Elimination Journal Entry: Subsidiary Activities

		Debit	Credit
12/31/XX	Investment Revenue (7.2.4)	(8.3.16)	
	Dividends (← a Contra-Equity Account)		(7.7.11)
	Investment in Subsidiary$_{security}$ (8.1.9)		(8.3.16) – (7.7.11)

		Debit	Credit
12/31/X5	Investment Revenue	99,000	
	Dividends		22,500
	Investment in Import/Export		76,500

27. **Amortize Differentials Elimination Journal Entry (8.3.19)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
Note: if the adjustment is negative, then reverse the journal entry.

Elimination Journal Entry: Depreciation Amount

		Debit	Credit
12/31/XX	Depreciation Expense	(8.3.11)	
	PP&E		(8.3.11)

Elimination Journal Entry: Amortization Amount

		Debit	Credit
12/31/XX	Other Expense	(8.3.13)	
	Other Assets		(8.3.13)

Elimination Journal Entry: Inventory Realization Amount

		Debit	Credit
12/31/XX	Cost of Goods Sold	(8.3.14)	
	Inventory		(8.3.14)

Elimination Journal Entry, If Goodwill Impairment Amount (8.3.17) $>$ 0 then:

		Debit	Credit
12/31/XX	Impairment Loss	(8.3.17)	
	Goodwill		(8.3.17)

Elimination Journal Entry: Depreciation Amount

		Debit	Credit
12/31/X5	Plant and Equipment (net)	1,500	
	Depreciation Expense		1,500

Elimination Journal Entry: Amortization Amount

		Debit	Credit
12/31/X5	Other Assets	3,000	
	Other Expense		3,000

Elimination Journal Entry: Inventory Realization Amount

		Debit	Credit
12/31/X5	Cost of Goods Sold	37,500	
	Inventory		37,500

28. **Non-Controlling Interest Elimination Journal Entry (8.3.22)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).

		Debit	Credit
12/31/XX	Non-Controlling Interest in Net Income (8.2.4)	(8.3.20)	
	Dividends (← a Contra-Equity Account)		(8.3.21)
	Non-Controlling Interest (8.2.2)		(8.3.20) – (8.3.21)

		Debit	Credit
12/31/X5	Non-Controlling Interest in Net Income	33,000	
	Dividends		7,500
	Non-Controlling Interest		22,500

8.10 Inventory Transaction, One Time, Year$_0$ sold = 0

Example 62
Inventory Sales Amount = $40,000.
Cost of Goods Sold = $25,000.
Subsidiary Sold Percent in 20X5 (Year$_0$) = 0%.
Subsidiary Sold Percent in 20X6 (Year$_1$) = 60%.

Prepare the elimination journal entry for 20X5.
Prepare the elimination journal entry for 20X6.

Solution 62:

1. **Gross Profit (8.5.3)**
Gross Profit = Sales Amount (8.5.1) – Cost of Goods Sold (8.5.2)

Gross Profit = 40,000 – 25,000 = 15,000

2. **Realized Gross Profit (8.5.5) Year 0**
   Realized Gross Profit = Gross Profit (8.5.3) × Sold Percent$_n$ (8.5.4) ← where n >= 0
   Realized Gross Profit = 15,000 × 0 = 0

3. **Total Sold Percent (8.5.6) Year 0**
   Total Sold Percent = $\sum_{i=0}^{n}$ Sold Percent Year$_i$ (8.5.4)
   Total Sold Percent = 0

4. **Total Deferred Gross Profit (8.5.7)**
   Total Deferred Gross Profit = Gross Profit (8.5.3) ×
   [1 – Total Sold Percent (8.5.6)]
   Total Deferred Gross Profit = 15,000 × (1 – 0) = 15,000

5. **Eliminate Cost of Goods Sold Year$_0$ (8.5.9)**
   Eliminate Cost of Goods Sold Year$_0$ = Cost of Goods Sold (8.5.2) +
   Realized Gross Profit (8.5.5)
   Eliminate Cost of Goods Sold Year$_0$ = 25,000 + 0 = 25,000

6. **Eliminate Inventory (8.5.10)**
   Eliminate Inventory = Total Deferred Gross Profit (8.5.7)
   Eliminate Inventory = 15,000

7. **Eliminate Sales (8.5.11)**
   Since in the year the transaction took place (Year$_0$) then:
   Eliminate Sales = Sales Amount (8.5.1)
   Eliminate Sales = 40,000

8. **Inventory Transaction Elimination Journal Entry (8.5.16)**
   The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
   Since in the year the transaction took place (Year$_0$) then:

		Debit	Credit
12/31/XX	Sales Revenue	Eliminate Sales (8.5.11)	
	Cost of Goods Sold		Eliminate Cost of Goods Sold (8.5.9)
	Inventory		Eliminate Inventory (8.5.10)

		Debit	Credit
12/31/X5	Sales Revenue	40,000	
	Cost of Goods Sold		25,000
	Inventory		15,000

9. **Realized Gross Profit (8.5.5) Year 1**
   Realized Gross Profit = Gross Profit (8.5.3) × Sold Percent$_n$ (8.5.4) ← where n >= 0
   Realized Gross Profit = 15,000 × 0.60 = 9,000

10. **Total Sold Percent (8.5.6)**
    Total Sold Percent = $\sum_{i=0}^{n}$ Sold Percent Year$_i$ (8.5.4)
    Total Sold Percent = 0 + 0.60 = 0.60

11. **Total Deferred Gross Profit (8.5.7)**
    Total Deferred Gross Profit = Gross Profit (8.5.3) ×
    [1 – Total Sold Percent (8.5.6)]
    Total Deferred Gross Profit = 15,000 × (1 – 0.60) = 6,000

12. **Eliminate Cost of Goods Sold Year$_n$ (8.5.13)**
    Eliminate Cost of Goods Sold Year$_n$ = Realized Gross Profit (8.5.5)
    Eliminate Cost of Goods Sold Year$_1$ = 9,000

13. **Eliminate Inventory (8.5.10)**
    Eliminate Inventory = Total Deferred Gross Profit (8.5.7)
    Eliminate Inventory = 6,000

14. **Original Deferred Gross Profit (8.5.8)**
    Original Deferred Gross Profit = Gross Profit (8.5.3) × [1 – Sold Percent Year_0 (8.5.4)]
    Original Deferred Gross Profit = 15,000 × (1 – 0) = 15,000

15. **Eliminate Retained Earnings (8.5.14)**
    Since beyond the year the transaction took place ($\text{Year}_n \leftarrow$ where n >= 1) then:
    Eliminate Retained Earnings = Original Deferred Gross Profit (8.5.8)
    Eliminate Retained Earnings = 15,000

16. **Inventory Transaction Elimination Journal Entry (8.5.16)**
    The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
    Since beyond the year the transaction took place ($\text{Year}_n \leftarrow$ where n >= 1) then:

		Debit	Credit
12/31/XX	Retained Earnings	Eliminate Retained Earnings (8.5.14)	
	Cost of Goods Sold		Eliminate Cost of Goods Sold (8.5.13)
	Inventory		Eliminate Inventory (8.5.10)

		Debit	Credit
12/31/X6	Retained Earnings	15,000	
	Cost of Goods Sold		9,000
	Inventory		6,000

8.11 Inventory Transaction, One Time, Year_0 sold = 30%

Example 63
Inventory Sales Amount = $64,000.
Cost of Goods Sold = $48,000.
Subsidiary Sold Percent in 20X5 (Year_0) = 30%.
Subsidiary Sold Percent in 20X6 (Year_1) = 45%.

Prepare the elimination journal entry for 20X5.
Prepare the elimination journal entry for 20X6.

Solution 63:

1. **Gross Profit (8.5.3)**
   Gross Profit = Sales Amount (8.5.1) – Cost of Goods Sold (8.5.2)
   Gross Profit = 64,000 – 48,000 = 16,000

2. **Realized Gross Profit (8.5.5) Year 0**
   Realized Gross Profit = Gross Profit (8.5.3) × Sold Percent_n (8.5.4) ← where n >= 0
   Realized Gross Profit = 16,000 × 0.30 = 4,800

3. **Total Sold Percent (8.5.6)**
   Total Sold Percent = $\sum_{i=0}^{n}$ Sold Percent Year_i (8.5.4)
   Total Sold Percent = 0.30

4. **Original Deferred Gross Profit (8.5.8)**
   Since in the year the transaction took place (Year_0) then:
   Original Deferred Gross Profit = Gross Profit (8.5.3) × [1 – Sold Percent Year_0 (8.5.4)]
   Original Deferred Gross Profit = 16,000 × (1 – 0.30) = 11,200

5. **Total Deferred Gross Profit (8.5.7)**
   Total Deferred Gross Profit = Gross Profit (8.5.3) × [1 – Total Sold Percent (8.5.6)]
   Total Deferred Gross Profit = 16,000 × (1 – 0.30) = 11,200

6. **Eliminate Cost of Goods Sold Year_0 (8.5.9)**
   Eliminate Cost of Goods Sold Year_0 = Cost of Goods Sold (8.5.2) + Realized Gross Profit (8.5.5)
   Eliminate Cost of Goods Sold Year_0 = 48,000 + 4,800 = 52,800

7. **Eliminate Inventory (8.5.10)**
   Eliminate Inventory = Total Deferred Gross Profit (8.5.7)
   Eliminate Inventory = 11,200

8. **Eliminate Sales (8.5.11)**
   Since in the year the transaction took place (Year$_0$) then:
   Eliminate Sales = Sales Amount (8.5.1)
   Eliminate Sales = 64,000

9. **Inventory Transaction Elimination Journal Entry (8.5.16)**
   The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
   Since in the year the transaction took place (Year$_0$) then:

		Debit	Credit
12/31/XX	Sales Revenue	Eliminate Sales (8.5.11)	
	Cost of Goods Sold		Eliminate Cost of Goods Sold (8.5.9)
	Inventory		Eliminate Inventory (8.5.10)

		Debit	Credit
12/31/X5	Sales Revenue	64,000	
	Cost of Goods Sold		52,800
	Inventory		11,200

10. **Realized Gross Profit (8.5.5) Year 1**
    Realized Gross Profit = Gross Profit (8.5.3) × Sold Percent$_n$ (8.5.4) ← where n >= 0
    Realized Gross Profit = 16,000 × 0.45 = 7,200

11. **Total Sold Percent (8.5.6)**
    Total Sold Percent = $\sum_{i=0}^{n}$ Sold Percent Year$_i$ (8.5.4)
    Total Sold Percent = 0.30 + 0.45 = 0.75

12. **Total Deferred Gross Profit (8.5.7)**
    Total Deferred Gross Profit = Gross Profit (8.5.3) ×
    [1 – Total Sold Percent (8.5.6)]
    Total Deferred Gross Profit = 16,000 × (1 – 0.75) = 4,000

13. **Eliminate Cost of Goods Sold Year$_n$ (8.5.13)**
    Eliminate Cost of Goods Sold Year$_n$ = Realized Gross Profit (8.5.5)
    Eliminate Cost of Goods Sold Year$_1$ = 7,200

14. **Eliminate Inventory (8.5.10)**
    Eliminate Inventory = Total Deferred Gross Profit (8.5.7)
    Eliminate Inventory = 4,000

15. **Eliminate Retained Earnings (8.5.14)**
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) then:
    Eliminate Retained Earnings = Original Deferred Gross Profit (8.5.8)
    Eliminate Retained Earnings = 11,200

16. **Inventory Transaction Elimination Journal Entry (8.5.16)**
    The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) then:

		Debit	Credit
12/31/XX	Retained Earnings	Eliminate Retained Earnings (8.5.14)	
	Cost of Goods Sold		Eliminate Cost of Goods Sold (8.5.13)
	Inventory		Eliminate Inventory (8.5.10)

		Debit	Credit
12/31/X6	Retained Earnings	11,200	
	Cost of Goods Sold		7,200
	Inventory		4,000

8.12 Fixed Asset Transaction: End of Year Sale

Example 64
Selling Price = $24,000.
Parent's Original Cost = $66,000.
Parent's Accumulated Depreciation = $44,000.
Sale Date = 12/31/X5.
New Estimated Remaining Years = 4.

Prepare the elimination journal entry for 20X5.

Solution 64:

1. **Book Value (8.6.1)**
   Book Value = Original Cost – Accumulated Depreciation
   Book Value = 66,000 – 44,000 = 22,000

2. **Gain/(Loss) on Sale (8.6.2)**
   Gain/(Loss) on Sale = Selling Price – Book Value (8.6.1)
   Gain/(Loss) on Sale = 24,000 – 22,000 = 2,000

3. **Percentage of Year Subsidiary Held (8.6.3)**
   Since Current Year = Year Of Transaction then:
   $$\text{Percentage of Year Subsidiary Held} = \frac{\text{Months Remaining In Year}}{12}$$
   $$\text{Percentage of Year Subsidiary Held} = \frac{0}{12} = 0$$

4. **Straight-Line Depreciation Elimination (8.6.4)**
   $$\text{Straight-Line Depreciation Elimination} = \frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}} \times \text{Percentage of Year Subsidiary Held (8.6.3)}$$
   $$\text{Straight-Line Depreciation Elimination} = \frac{2{,}000}{4} \times 0 = 0$$

5. **Total Depreciation Elimination (8.6.5)**
   Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
   Total Depreication Elimination = 0

6. **Eliminate Accumulated Depreciation (8.6.6)**
   Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
   Eliminate Accumulated Depreciation = 44,000 – 0 = 44,000

7. **Eliminate Fixed Asset (8.6.7)**
   Eliminate Fixed Asset = Parent's Original Cost – Selling Price
   Eliminate Fixed Asset = 66,000 – 24,000 = 42,000

8. **Fixed Asset Transaction Elimination Journal Entry Year$_0$ (8.6.8)**
   The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
   Since in the year the transaction took place (Year$_0$) and
   Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Gain	Gain/(Loss) on Sale (8.6.2)	
	Depreciation Expense		Depreciation Elimination Year$_0$ (8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X5	PP&E	42,000	
	Gain on Sale of PP&E	2,000	
	Accumulated Depreciation		44,000

8.13 Fixed Asset Transaction: Begin-Year Sale

Example 65
Selling Price = $264,000.
Parent's Original Cost = $500,000.
Parent's Accumulated Depreciation = $300,320.
Sale Date = 01/01/X5.
New Estimated Remaining Years = 20.

Prepare the elimination journal entry for 20X5.
Prepare the elimination journal entry for 20X6.
Prepare the elimination journal entry for 20X7.

Solution 65:

1. **Book Value (8.6.1)**
   Book Value = Original Cost – Accumulated Depreciation
   Book Value = 500,000 – 300,320 = 199,680

2. **Gain/(Loss) on Sale (8.6.2)**
   Gain/(Loss) on Sale = Selling Price – Book Value (8.6.1)
   Gain/(Loss) on Sale = 264,000 – 199,680 = 64,320

3. **Fixed Asset Transaction: Percentage of Year Subsidiary Held (8.6.3) 20X5**
   Since Current Year = Year Of Transaction then:
   $$\text{Percentage of Year Subsidiary Held} = \frac{\text{Months Remaining In Year}}{12}$$
   $$\text{Percentage of Year Subsidiary Held} = \frac{12}{12} = 1.0$$

4. **Straight-Line Depreciation Elimination Year$_n$ (8.6.4)**
   $$\text{Straight-Line Depreciation Elimination Year}_n = \frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}} \times \text{Percentage of Year Subsidiary Held (8.6.3)}$$
   $$\text{Straight-Line Depreciation Elimination Year}_0 = \frac{64{,}320}{20} \times 1.0 = 3{,}216$$

5. **Total Depreciation Elimination (8.6.5)**
   Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
   Total Depreication Elimination = 3,216

6. **Eliminate Accumulated Depreciation (8.6.6)**
   Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
   Eliminate Accumulated Depreciation = 300,320 – 3,216 = 297,104

7. **Eliminate Fixed Asset (8.6.7)**
   Eliminate Fixed Asset = Parent's Original Cost – Selling Price
   Eliminate Fixed Asset = 500,000 – 264,000 = 236,000

8. **Fixed Asset Transaction Elimination Journal Entry Year$_0$ (8.6.8)**
   The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
   Since in the year the transaction took place (Year$_0$) and
   Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Gain on Sale of PP&E	Gain/(Loss) on Sale (8.6.2)	
	Depreciation Expense		Depreciation Elimination Year$_0$ (8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X5	PP&E	236,000	
	Gain on Sale of PP&E	64,320	
	Depreciation Expense		3,216
	Accumulated Depreciation		297,104

9. **Fixed Asset Transaction: Percentage of Year Subsidiary Held (8.6.3) 20X6**
   Since Current Year > Year Of Transaction then:
   Percentage of Year Subsidiary Held = 1.0

10. **Straight-Line Depreciation Elimination Year$_n$ (8.6.4)**
    Straight-Line Depreciation Elimination Year$_n$ = $\frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}}\times$ Percentage of Year Subsidiary Held (8.6.3)
    Straight-Line Depreciation Elimination Year$_1$ = $\frac{64{,}320}{20}\times$ 1.0 = 3,216

11. **Total Depreciation Elimination (8.6.5)**
    Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
    Total Depreication Elimination = 3,216 + 3,216 = 6,432

12. **Eliminate Accumulated Depreciation (8.6.6)**
    Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
    Eliminate Accumulated Depreciation = 300,320 – 6,432 = 293,888

13. **Eliminate Retained Earnings (8.6.9)**
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) then:
    Eliminate Retained Earnings = Gain/(Loss) on Sale (8.6.2) – Total Depreciation Elimination (8.6.5) + Straight-Line Depreciation Elimination Year$_n$ (8.6.4)
    Eliminate Retained Earnings = 64,320 – 6,432 + 3,216 = 61,104

14. **Eliminate Fixed Asset (8.6.7)**
    Eliminate Fixed Asset = Parent's Original Cost – Selling Price
    Eliminate Fixed Asset = 500,000 – 264,000 = 236,000

15. **Fixed Asset Transaction Elimination Journal Entry Year$_n$ (8.6.10)**
    The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) and
    Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Retained Earnings	Eliminate Retained Earnings (8.6.9)	
	Depreciation Expense		(8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X6	PP&E	236,000	
	Retained Earnings	61,104	
	Depreciation Expense		3,216
	Accumulated Depreciation		293,888

16. **Fixed Asset Transaction: Percentage of Year Subsidiary Held (8.6.3) 20X7**
    Since Current Year > Year Of Transaction then:
    Percentage of Year Subsidiary Held = 1.0

17. **Straight-Line Depreciation Elimination Year$_n$ (8.6.4)**
    Straight-Line Depreciation Elimination Year$_n$ = $\frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}}\times$ Percentage of Year Subsidiary Held (8.6.3)
    Straight-Line Depreciation Elimination Year$_1$ = $\frac{64{,}320}{20}\times$ 1.0 = 3,216

18. **Total Depreciation Elimination (8.6.5)**
    Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
    Total Depreication Elimination = 3,216 + 3,216 + 3,216 = 9,648

19. **Eliminate Accumulated Depreciation (8.6.6)**
    Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
    Eliminate Accumulated Depreciation = 300,320 – 9,648 = 290,672

20. **Eliminate Retained Earnings (8.6.9)**
Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) then:
Eliminate Retained Earnings = Gain/(Loss) on Sale (8.6.2) –
Total Depreciation Elimination (8.6.5) +
Straight-Line Depreciation Elimination Year$_n$ (8.6.4)
Eliminate Retained Earnings = 64,320 – 9,648 + 3,216 = 57,888

21. **Eliminate Fixed Asset (8.6.7)**
Eliminate Fixed Asset = Parent's Original Cost – Selling Price
Eliminate Fixed Asset = 500,000 – 264,000 = 236,000

22. **Fixed Asset Transaction Elimination Journal Entry Year$_n$ (8.6.10)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) and
Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Retained Earnings	Eliminate Retained Earnings (8.6.9)	
	Depreciation Expense		(8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X7	PP&E	236,000	
	Retained Earnings	57,888	
	Depreciation Expense		3,216
	Accumulated Depreciation		290,672

8.14 Fixed Asset Transaction: Mid-Year Sale

Example 66
Selling Price = $264,000.
Parent's Original Cost = $500,000.
Parent's Accumulated Depreciation = $300,320.
Sale Date = 05/01/X5.
New Estimated Remaining Years = 20.

Prepare the elimination journal entry for 20X5.
Prepare the elimination journal entry for 20X6.

Solution 66:

1. **Book Value (8.6.1)**
Book Value = Original Cost – Accumulated Depreciation
Book Value = 500,000 – 300,320 = 199,680

2. **Gain/(Loss) on Sale (8.6.2)**
Gain/(Loss) on Sale = Selling Price – Book Value (8.6.1)
Gain/(Loss) on Sale = 264,000 – 199,680 = 64,320

3. **Fixed Asset Transaction: Percentage of Year Subsidiary Held (8.6.3) 20X5**
Since Current Year = Year Of Transaction then:
$$\text{Percentage of Year Subsidiary Held} = \frac{\text{Months Remaining In Year}}{12}$$
$$\text{Percentage of Year Subsidiary Held} = \frac{8}{12}$$

4. **Straight-Line Depreciation Elimination Year$_n$ (8.6.4)**
$$\text{Straight-Line Depreciation Elimination Year}_n = \frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}} \times \text{Percentage of Year Subsidiary Held (8.6.3)}$$
$$\text{Straight-Line Depreciation Elimination Year}_0 = \frac{64{,}320}{20} \times \frac{8}{12} = 2{,}144$$

5. **Total Depreciation Elimination (8.6.5)**
Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
Total Depreication Elimination = 2,144

6. **Eliminate Accumulated Depreciation (8.6.6)**
   Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
   Eliminate Accumulated Depreciation = 300,320 – 2,144 = 298,176

7. **Eliminate Fixed Asset (8.6.7)**
   Eliminate Fixed Asset = Parent's Original Cost – Selling Price
   Eliminate Fixed Asset = 500,000 – 264,000 = 236,000

8. **Fixed Asset Transaction Elimination Journal Entry Year$_0$ (8.6.8)**
   The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
   Since in the year the transaction took place (Year$_0$) and
   Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Gain on Sale of PP&E	Gain/(Loss) on Sale (8.6.2)	
	Depreciation Expense		Depreciation Elimination Year$_0$ (8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X5	PP&E	236,000	
	Gain on Sale of PP&E	64,320	
	Depreciation Expense		2,144
	Accumulated Depreciation		298,176

9. **Fixed Asset Transaction: Percentage of Year Subsidiary Held (8.6.3) 20X6**
   Since Current Year > Year Of Transaction then:
   Percentage of Year Subsidiary Held = 1.0

10. **Straight-Line Depreciation Elimination Year$_n$ (8.6.4)**
    $$\text{Straight-Line Depreciation Elimination Year}_n = \frac{\text{Gain/(Loss) on Sale (8.6.2)}}{\text{New Estimated Useful Years}} \times \text{Percentage of Year Subsidiary Held (8.6.3)}$$
    $$\text{Straight-Line Depreciation Elimination Year}_1 = \frac{64{,}320}{20} \times 1.0 = 3{,}216$$

11. **Total Depreciation Elimination (8.6.5)**
    Total Depreication Elimination = $\sum_{i=0}^{n}$ Straight-Line Depreciation Elimination Year$_i$ (8.6.4)
    Total Depreication Elimination = 2,144 + 3,216 = 5,360

12. **Eliminate Accumulated Depreciation (8.6.6)**
    Eliminate Accumulated Depreciation = Original Accumulated Depreciation – Total Depreciation Elimination (8.6.5)
    Eliminate Accumulated Depreciation = 300,320 – 5,360 = 294,960

13. **Eliminate Retained Earnings (8.6.9)**
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) then:
    Eliminate Retained Earnings = Gain/(Loss) on Sale (8.6.2) – Total Depreciation Elimination (8.6.5) + Straight-Line Depreciation Elimination Year$_n$ (8.6.4)
    Eliminate Retained Earnings = 64,320 – 5,360 + 3,216 = 62,176

14. **Eliminate Fixed Asset (8.6.7)**
    Eliminate Fixed Asset = Parent's Original Cost – Selling Price
    Eliminate Fixed Asset = 500,000 – 264,000 = 236,000

15. **Fixed Asset Transaction Elimination Journal Entry Year$_n$ (8.6.10)**
    The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
    Since beyond the year the transaction took place (Year$_n$ ← where n >= 1) and
    Since Gain/(Loss) on Sale (8.6.2) > 0 then:

		Debit	Credit
12/31/XX	PP&E	Eliminate Fixed Asset (8.6.7)	
	Retained Earnings	Eliminate Retained Earnings (8.6.9)	
	Depreciation Expense		(8.6.4)
	Accumulated Depreciation		Eliminate Accumulated (8.6.6)

		Debit	Credit
12/31/X6	PP&E	236,000	
	Retained Earnings	62,176	
	Depreciation Expense		3,216
	Accumulated Depreciation		294,960

8.15 Consolidated Dividends

Example 67
Houseman Corporation purchased 100 percent of Riddle Corporation on October 1, 20X1. Prior to the acquisition date, Houseman and Riddle declared and paid dividends of $90,000 and $20,000, respectively. Subsequent to the acquisition, Houseman and Riddle declared and paid dividends of $45,000 and $15,000, respectively. What amount of dividends is include on the consolidated financial statements?

Solution 67:

1. **Houseman's pre-acquisition dividends declared**

		Debit	Credit
09/30/20X1	Dividends	90,000	
	Cash		90,000

2. **Riddle's pre-acquisition dividends declared**

		Debit	Credit
09/30/20X1	Dividends	20,000	
	Cash		20,000

3. **Initial Purchase Elimination Journal Entry (8.2.15)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).

		Debit	Credit
XX/XX/XX	Common Stock at Par	Subsidiary @ Purchase Date	
	Additional Paid-In Capital	Subsidiary @ Purchase Date	
	Retained Earnings	Subsidiary @ Purchase Date	
	Goodwill (← an Asset Account)	(8.2.11) if positive	
	Preacquisition Earnings	(8.2.6)	
	Dividends (← a Contra-Equity Account)		Subsidiary @ Purchase
	Investment in Subsidiary$_{security}$		Beginning Balance
	Non-Controlling Interest (8.2.2)		(8.2.3)
	Extraordinary Gain		(8.2.13) if negative
	Total Fair Book Difference Table (8.2.10)		

		Debit	Credit
10/01/20X1	Dividends		20,000

4. **Houseman's post-acquisition dividends declared**

		Debit	Credit
12/31/20X1	Dividends	45,000	
	Cash		45,000

5. **Riddle's post-acquisition dividends declared**

		Debit	Credit
12/31/20X1	Dividends	15,000	
	Cash		15,000

6. **Dividend Realization Amount (8.3.6)**
Apply the Equity Investment: Majority Dividend Realization Amount (7.7.11).
Majority Dividend Realization Amount = Acquiree's Dividends Declared × Ownership Percentage (7.7.2)
Majority Dividend Realization Amount = 15,000 × 1.0 = 15,000
Journal Entry

		Debit	Credit
XX/XX/XX	Cash or Dividends Receivable	(7.7.11)	
	Investment in Subsidiary$_{security}$ (7.7.1)		(7.7.11)

		Debit	Credit
12/31/20X1	Cash	15,000	
	Investment in Riddle		15,000

7. **Subsequent Subsidiary Activities Elimination Journal Entry (8.3.18)**
The Elimination Entity is a fictional entity. It is is used to help consolidate the Parent with the Subsidiary (8.1.9).
Elimination Journal Entry: Subsidiary Activities

		Debit	Credit
12/31/XXXX	Investment Revenue (7.2.4)	(8.3.16)	
	Dividends (← a Contra-Equity Account)		(7.7.11)
	Investment in Subsidiary$_{security}$ (8.1.9)		(8.3.16) – (7.7.11)

		Debit	Credit
12/31/20X1	Dividends		15,000

8. **Ledgers**

Houseman's Dividends

09/30/X1 90,000	
12/31/X1 45,000	
balance 135,000	

Riddle's Dividends

09/30/X1 20,000	
12/31/X1 15,000	
balance 35,000	

Eliminated Dividends

	09/30/X1 20,000
	12/31/X1 15,000
	balance 35,000

Consolidated Dividends

09/30/X1 90,000	
12/31/X1 45,000	
09/30/X1 20,000	
12/31/X1 15,000	
	09/30/X1 20,000
	12/31/X1 15,000
balance 135,000	

The dividends included on the consolidated financial statement is $135,000. This is equal to the parent's dividends declared.

Chapter 9

Lease Examples

9.1 Operating Lease

Example 68, 20X5:
Lease Term = 20 years.
Rent = $6,000, due each January 1.
Age of Leased Item = brand new.
Fair Value of Leased Item = $60,000.
Cost of Asset to Lessor = $60,000.
Estimated Economic Life = 30 years.
Estimated Residual Value (unguaranteed) = $5,000.
Executory costs lessee pays the vendor directly = $300 per year.
Item is returned at end of term.
Lessee's incremental borrowing rate = 12%.
Lessor's incremental borrowing rate = unknown.
Show that this is an operating lease for the lessee.

Solution 68:

1. **Transfer of Ownership Test**
   If the item being leased stays with the lessee after the Lease Term (9.3.2), then it is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since the item being leased is being returned to the lessor, then:
   the Transfer of Ownership Test fails.

2. **Bargain Purchase Option Test**
   A Bargain Purchase Option (9.3.11) automatically results in a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since there is no Bargain Purchase Option then:
   the Bargain Purchase Option Test fails.

3. **Present Value Minimum Lease Payments for Lessee (9.3.12)**
   PV Minimum Lease Payments for Lessee = Capital Lease Rent (9.3.5)
   pvad[$1, Lessee Interest Rate (9.3.4), Lease Term (9.3.2)]
   pv[Guaranteed Residual Value (9.3.8), Lessee Interest Rate, Lease Term]
   pv[Bargain Purchase Option (9.3.11), Lessee Interest Rate, Lease Term]
   pv[Bogus Failure To Renew Penalty (9.3.10), Lessee Interest Rate, Lease Term]

$$\begin{aligned}\text{PV Minimum Lease Payments for Lessee} &= 6{,}000 \times \\ &\quad \text{pvad[\$1, 12\%, 20]} + \\ &\quad \text{pv[0, 12\%, 20]} \\ &= 6{,}000 \times \\ &\quad 8.36578 + \\ &\quad 0 \\ &= 50{,}194.78\end{aligned}$$

4. **Last Quarter Economic Age (9.3.16)**

$$\begin{aligned}\text{Last Quarter Economic Age} &= \text{Total Economic Years (9.3.14)} \times \\ &\quad 0.75 \\ \text{Last Quarter Economic Age} &= 30 \times 0.75 \\ &= 22.5\end{aligned}$$

5. **Remaining Years Ratio (9.3.17)**

$$\begin{aligned}\text{Remaining Years Ratio} &= \frac{\text{Lease Term (9.3.2)}}{\text{Remaining Economic Years (9.3.15)}} \\ \text{Remaining Years Ratio} &= \frac{20}{30} \\ &= 0.67\end{aligned}$$

6. **Economic Life Test**

   After the end of the Lease Term (9.3.2), is the item's economic life almost over?

   First, is the item's economic life almost over at the beginning of the lease?
   If Asset's Age >= Last Quarter Economic Age (9.3.16) then:
   The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

   If Asset's Age < Last Quarter Economic Age (9.3.16) then:
   The Economic Life Test Continues. Check the second step.

   Since Asset's Age = 0 and 0 is < 22.5 then:
   The Economic Life Test Continues. Check the second step.

   Second, is the item's economic life almost over at the end of the lease?
   If Remaining Years Ratio (9.3.17) >= 0.75 then:
   The Economic Life Test Passes. It is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   If Remaining Years Ratio (9.3.17) < 0.75 then:
   The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

   Since Remaining Years Ratio = 0.67 and 0.67 is < 0.75 then:
   The Economic Life Test Fails.

7. **Lessee Minimum Lease Payments Ratio (9.3.18)**

$$\begin{aligned}\text{Lessee Minimum Lease Payments Ratio} &= \frac{\text{PV Minimum Lease Payments for Lessee (9.3.12)}}{\text{Leased Item Fair Value (9.3.6)}} \\ \text{Lessee Minimum Lease Payments Ratio} &= \frac{50{,}194.78}{60{,}000.00} \\ &= 0.84\end{aligned}$$

8. **Recovery Of Investment Test**

   If Lessee Minimum Lease Payments Ratio (9.3.18) >= 0.90 then:
   Capital Lease (9.3) for the Lessee (9.5).

   Since Lessee Minimum Lease Payments Ratio = 0.84 and 0.84 is not >= 0.90 then:
   the Recovery Of Investment Test fails.

9. **Since all of the Capital Lease Tests (9.4) fail, it is an operating lease for the lessee.**

9.2 Capital Lease: Lessee

Example 69, 20X5:

Leased item = truck.
Lease Term = 3 years.
Rent = \$5,582.62, due each January 1.
Age of Leased Item = brand new.
Fair Value of Leased Item = \$20,000.
Cost of Asset to Lessor = \$15,000.
Estimated Economic Life = 7 years.
Guaranteed Residual Value = \$7,000.
Executory costs lessee pays the vendor directly = \$500 per year.
Item is returned at end of term.
Lessee's incremental borrowing rate = 12%.
Lessor's incremental borrowing rate = unknown.
Show that this is a capital lease for the lessee.
Prepare one year of lessee's complete journal entries and three years of the depreciation (straight-line).

Solution 69:

1. **Transfer of Ownership Test**
   If the item being leased stays with the lessee after the Lease Term (9.3.2), then it is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since the item being leased is being returned to the lessor, then:
   the Transfer of Ownership Test fails.

2. **Bargain Purchase Option Test**
   A Bargain Purchase Option (9.3.11) automatically results in a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since there is no Bargain Purchase Option then:
   the Bargain Purchase Option Test fails.

3. **Present Value Minimum Lease Payments for Lessee (9.3.12)**

   PV Minimum Lease Payments for Lessee = Capital Lease Rent (9.3.5)
   pvad[\$1, Lessee Interest Rate (9.3.4), Lease Term (9.3.2)]
   pv[Guaranteed Residual Value (9.3.8), Lessee Interest Rate, Lease Term]
   pv[Bargain Purchase Option (9.3.11), Lessee Interest Rate, Lease Term]
   pv[Bogus Failure To Renew Penalty (9.3.10), Lessee Interest Rate, Lease Term]

   PV Minimum Lease Payments for Lessee = 5,582.62 ×
   pvad[\$1, 12%, 3] +
   pv[7,000, 12%, 3]
   = 5,582.62 ×
   2.69005 +
   4,982.46
   = 20,000.00 (← rounded)

4. **Last Quarter Economic Age (9.3.16)**

   Last Quarter Economic Age = Total Economic Years (9.3.14) ×
   0.75
   Last Quarter Economic Age = 3 × 0.75
   = 2.25

5. **Remaining Years Ratio (9.3.17)**

   $$\text{Remaining Years Ratio} = \frac{\text{Lease Term (9.3.2)}}{\text{Remaining Economic Years (9.3.15)}}$$
   $$\text{Remaining Years Ratio} = \frac{3}{7}$$
   $$= 0.43$$

6. **Economic Life Test**
   After the end of the Lease Term (9.3.2), is the item's economic life almost over?

First, is the item's economic life almost over at the beginning of the lease?
If Asset's Age >= Last Quarter Economic Age (9.3.16) then:
The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

If Asset's Age < Last Quarter Economic Age (9.3.16) then:
The Economic Life Test Continues. Check the second step.

Since Asset's Age = 0 and 0 is < 2.25 then:
The Economic Life Test Continues. Check the second step.

Second, is the item's economic life almost over at the end of the lease?
If Remaining Years Ratio (9.3.17) >= 0.75 then:
The Economic Life Test Passes. It is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

If Remaining Years Ratio (9.3.17) < 0.75 then:
The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

Since Remaining Years Ratio = 0.43 and 0.43 is < 0.75 then:
The Economic Life Test Fails.

7. **Lessee Minimum Lease Payments Ratio (9.3.18)**

$$\text{Lessee Minimum Lease Payments Ratio} = \frac{\text{PV Minimum Lease Payments for Lessee (9.3.12)}}{\text{Leased Item Fair Value (9.3.6)}}$$

$$\text{Lessee Minimum Lease Payments Ratio} = \frac{20{,}000}{20{,}000} = 1.0$$

8. **Recovery Of Investment Test**
If Lessee Minimum Lease Payments Ratio (9.3.18) >= 0.90 then:
Capital Lease (9.3) for the Lessee (9.5).

Since Lessee Minimum Lease Payments Ratio = 1.0 and 1.0 is >= 0.90 then:
the Recovery Of Investment Test passes.

9. **Lessee Capitalized Amount**

$$\begin{aligned}\text{(9.5.2) Lessee Capitalized Amount} = {} & \text{Capital Lease Rent (9.3.5)} \times \\ & \text{pvad(\$1, Lessee Interest Rate (9.3.4), Lease Term (9.3.2)} + \\ & \text{pv(Bargain Purchase Option (9.3.11), Lesee Interest Rate, Lease Term)} + \\ & \text{pv(Guaranteed Residual Value (9.3.8), Lesee Interest Rate, Lease Term)}\end{aligned}$$

$$\begin{aligned}\text{(9.5.2) Lessee Capitalized Amount} &= 5{,}582.62 \times 2.69005 + 4{,}982.46 \\ &= 20{,}000.00\end{aligned}$$

Journal Entry

		Debit	Credit
01/01/XX	Capital Lease$_{item}$	(9.5.2)	
	Lease Liability (9.5.1)		(9.5.2)

		Debit	Credit
01/01/X5	Capital Lease Truck	20,000.00	
	Lease Liability (9.5.1)		20,000.00

Ledgers

Lease Liability

	01/01/X5 20,000.00
	balance 20,000.00

Capital Lease Truck

01/01/X5 20,000	
balance 20,000	

10. **Lease Liability Reduction, First Rent Payment**

$$\begin{aligned}\text{(9.5.3) Lease Liability Reduction, First Rent Payment} = {} & \text{Lease Payment (9.3.23)} - \\ & \text{Included Executory Costs (9.3.21)}\end{aligned}$$

(9.5.3) Lease Liability Reduction, First Rent Payment = 5,582.62 – 0
= 5,582.62

Journal Entry, Lessee's First Rent Payment
If Included Executory Cost (9.3.21) = 0 then:

		Debit	Credit
01/01/XX	Lease Liability (9.5.1)	(9.5.3)	
	Cash		(9.3.23)

Ledger

	Debit	Credit
01/01/X5	Lease Liability (9.5.1)	5,582.62	
	Cash		5,582.62

Ledger

Lease Liability

	01/01/X5 20,000.00
01/01/X5 5,582.62	
	balance 14,417.38

11. **Lessee Interest Expense**
(9.5.5) Lessee Interest Expense = Lease Liability (9.5.1) Balance ×
Lessee Interest Rate (9.3.4)
(9.5.5) Lessee Interest Expense = 14,417.38 × 0.12
= 1,730.09

Journal Entry

		Debit	Credit
12/31/XX	Interest Expense	(9.5.5)	
	Interest Payable		(9.5.5)

		Debit	Credit
12/31/X5	Interest Expense	1,730.09	
	Interest Payable		1,730.09

12. **Lessee Straight-Line Depreciation Denominator (9.5.6)**
If Lessee Keeps the Leased Item then:
Lessee Straight-Line Depreciation Denominator = Remaining Economic Years (9.3.15)
If Lessee Returns the Leased Item then:
Lessee Straight-Line Depreciation Denominator = Lease Term (9.3.2)

Since Lessee Returns the Leased Item then:
Lessee Straight-Line Depreciation Denominator = 3

13. **Lessee Depreciation Residual Value (9.5.7)**
If Lessee Keeps the Leased Item then:
Lessee Depreciation Residual Value = Residual Value (9.3.7)
If Lessee Returns the Leased Item then:
Lessee Depreciation Residual Value = Guaranteed Residual Value (9.3.8)

Since Lessee Returns the Leased Item then:
Lessee Depreciation Residual Value = 7,000

14. **Lessee Depreciation Expense (9.5.8)**

$$\text{Lessee Depreciation Expense} = \frac{\text{Capitalized Amount (9.5.2)} - \text{Lessee Depreciation Residual Value (9.5.7)}}{\text{Lessee Straight-Line Depreciation Denominator (9.5.6)}}$$

$$\text{Lessee Depreciation Expense} = \frac{20{,}000 - 7{,}000}{3}$$
$$= 4{,}333.33$$

15. **Journal Entry, year 2005**

		Debit	Credit
12/31/XX	Depreciation Expense	(9.5.8)	
	Accumulated Depreciation$_{item}$		(9.5.8)

		Debit	Credit
12/31/X5	Depreciation Expense	4,333.33	
	Accumulated Depreciation Truck		4,333.33

Capital Lease Truck

01/01/X5 20,000	
balance 20,000	

Accumulated Depreciation Truck

	01/01/X5 4,333.33
	balance 4,333.33

Truck Book Value = 20,000 – 4,333.33 = 15,666.67

16. **Journal Entry, year 2006**

		Debit	Credit
12/31/X6	Depreciation Expense	4,333.33	
	Accumulated Depreciation Truck		4,333.33

Capital Lease Truck

01/01/X5 20,000	
balance 20,000	

Accumulated Depreciation Truck

	01/01/X5 4,333.33
	01/01/X6 4,333.33
	balance 8,666.66

Truck Book Value = 20,000 – 8,666.66 = 11,333.34

17. **Journal Entry, year 2007**

		Debit	Credit
12/31/X7	Depreciation Expense	4,333.33	
	Accumulated Depreciation Truck		4,333.33

Capital Lease Truck

01/01/X5 20,000	
balance 20,000	

Accumulated Depreciation Truck

	01/01/X5 4,333.33
	01/01/X6 4,333.33
	01/01/X7 4,333.33
	balance 13,000.00

Truck Book Value = 20,000 – 13,000 = 7,000
Note: Truck Book Value = Guaranteed Residual Value

9.3 Capital Lease: Lessor

Example 70, 20X5:
Leased item = truck.
Lease Term = 3 years.
Rent = $5,582.62, due each January 1.
Age of Leased Item = brand new.
Fair Value of Leased Item = $20,000.
Cost of Asset to Lessor = $15,000.
Estimated Economic Life = 7 years.
Guaranteed Residual Value = $7,000.
Executory costs lessee pays the vendor directly = $500 per year.
Item is returned at end of term.
Lessor's incremental borrowing rate = 12%.
Show that this is a capital lease for the lessor.
Prepare the lessor's lease receivable journal entry.

Solution 70:

1. **Transfer of Ownership Test**
   If the item being leased stays with the lessee after the Lease Term (9.3.2), then it is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since the item being leased is being returned to the lessor, then:
   the Transfer of Ownership Test fails.

2. **Bargain Purchase Option Test**
   A Bargain Purchase Option (9.3.11) automatically results in a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   Since there is no Bargain Purchase Option then:
   the Bargain Purchase Option Test fails.

3. **Last Quarter Economic Age (9.3.16)**
   $$\begin{aligned}\text{Last Quarter Economic Age} &= \text{Total Economic Years (9.3.14)} \times 0.75\\ \text{Last Quarter Economic Age} &= 3 \times 0.75\\ &= 2.25\end{aligned}$$

4. **Remaining Years Ratio (9.3.17)**
   $$\begin{aligned}\text{Remaining Years Ratio} &= \frac{\text{Lease Term (9.3.2)}}{\text{Remaining Economic Years (9.3.15)}}\\ \text{Remaining Years Ratio} &= \frac{3}{7}\\ &= 0.43\end{aligned}$$

5. **Economic Life Test**
   After the end of the Lease Term (9.3.2), is the item's economic life almost over?

   First, is the item's economic life almost over at the beginning of the lease?
   If Asset's Age >= Last Quarter Economic Age (9.3.16) then:
   The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

   If Asset's Age < Last Quarter Economic Age (9.3.16) then:
   The Economic Life Test Continues. Check the second step.

   Since Asset's Age = 0 and 0 is < 2.25 then:
   The Economic Life Test Continues. Check the second step.

   Second, is the item's economic life almost over at the end of the lease?
   If Remaining Years Ratio (9.3.17) >= 0.75 then:
   The Economic Life Test Passes. It is a Capital Lease (9.3) for both the Lessee (9.5) and the Lessor (9.6).

   If Remaining Years Ratio (9.3.17) < 0.75 then:
   The Economic Life Test Fails. Check the other tests for Capital Lease Accounting (9.3).

   Since Remaining Years Ratio = 0.43 and 0.43 is < 0.75 then:
   The Economic Life Test Fails.

6. **Present Value Minimum Lease Payments for Lessor (9.3.13)**
   $$\begin{aligned}\text{PV Minimum Lease Payments for Lessor} = {} & \text{Capital Lease Rent (9.3.5)}\\ & \text{pvad[\$1, Lessor Interest Rate (9.3.3), Lease Term (9.3.2)]}\\ & \text{pv[Guaranteed Residual Value (9.3.8), Lessee Interest Rate, Lease Term]}\\ & \text{pv[Bargain Purchase Option (9.3.11), Lessee Interest Rate, Lease Term]}\\ & \text{pv[Third Party Guarantee (9.3.9), Lessor Interest Rate, Lease Term]}\\ & \text{pv[Bogus Failure To Renew Penalty (9.3.10), Lessee Interest Rate, Lease Term]}\end{aligned}$$

PV Minimum Lease Payments for Lessor = 5,582.62 ×
pvad[$1, 12%, 3] +
pv[7,000, 12%, 3]
= 5,582.62 ×
2.69005 +
4,982.46
= 20,000.00

7. **Lessor Minimum Lease Payments Ratio (9.3.19)**

$$\text{Lessor Minimum Lease Payments Ratio} = \frac{\text{PV Minimum Lease Payments for Lessor (9.3.13)}}{\text{Leased Item Fair Value (9.3.6)}}$$

$$\text{Lessor Minimum Lease Payments Ratio} = \frac{20{,}000.00}{20{,}000.00} = 1.0$$

8. (**Lease Payment (9.3.23)**

Lease Payment = Capital Lease Rent (9.3.5) +
Included Executory Costs (9.3.21)
Lease Payment = 5,582.62 + 0.00
= 5,582.62

9. **Recovery Of Investment Test (9.4.6)**

If Lessor Minimum Lease Payments Ratio (9.3.19) >= 0.90 then:
Capital Lease (9.3) for the Lessor (9.6).
If Lessor Minimum Lease Payments Ratio (9.3.19) >= 0.90 then:
Capital Lease (9.3) for the Lessor (9.6).

Since Lessor Minimum Lease Payments Ratio = 1.0 and 1.0 is >= 0.90 then:
the Recovery Of Investment Test passes.

10. **Lessor Receivable Amount (9.6.9)**

Lessor Receivable Amount = [Capital Lease Rent (9.3.5) ×
Lease Term (9.3.2)] +
Bargain Purchase Option (9.3.11) +
Residual Value (9.3.7) +
Guaranteed Residual Value (9.3.8) +
Bogus Failure To Renew Penality (9.3.10) +
Third Party Guarantee (9.3.9)
Lessor Receivable Amount = 16,747.86 + 7,000.00
= 23,747.86

11. **Lessor Unearned Interest Revenue (9.6.10)**

Lessor Unearned Interest Revenue = Lessor Receivable Amount (9.6.9) –
Leased Item Fair Value (9.3.6)
Lessor Unearned Interest Revenue = 23,747.86 – 20,000.00
= 3,747.86

12. (**Lessor Dealer's Profit (9.6.3)**

Lessor Dealer's Profit = Leased Item Fair Value (9.3.6) – Book Value
Lessor Dealer's Profit = 20,000 – 15,000 = 5,000

13. **Lessor Sales Revenue (9.6.6)**

Lessor Sales Revenue = Leased Item Fair Value (9.3.6) –
pv[Residual Value (9.3.7), Lessor Interest Rate, Lease Term]
Lessor Sales Revenue = 20,000 – 0 = 20,000

14. **Lessor Cost of Goods Sold (9.6.7)**

Lessor Cost of Goods Sold = Book Value –
pv[Residual Value (9.3.7), Lessor Interest Rate, Lease Term]
Lessor Cost of Goods Sold = 15,000 – 0 = 15,000

15. **Lessor Lease Receivable Journal Entry**
If Lessor Dealer's Profit (9.6.3) > 0 then:

		Debit	Credit
01/01/X5	Lease Receivable (9.6.8)	23,747.86	
	Cost of Goods Sold	15,000.00	
	Sales Revenue		20,000.00
	Equipment Truck		15,000.00
	Lessor Unearned Interest Revenue		3,747.86

9.4 Capital Lease: Lessee

Example 71, 20X3:
Lease Term = 5 years.
Lease Payments = $25,981.62, due each January 1.
Age of Leased Item = brand new.
Fair Value of Leased Item = $100,000.
Estimated Economic Life = 5 years.
Estimated Residual Value = $0.
Annual property taxes lessee pays to lessor to pay the government = $2,000.
Item is returned at end of term.
Lessee's incremental borrowing rate = 11%.
Lessor's incremental borrowing rate = 10% (known to Lessee).
Prepare one year of lessee's complete journal entries and year two of the rent payment.

Solution 71:

1. **Capital Lease Rent**
(9.3.5) Capital Lease Rent = Lease Payment (9.3.23) – Included Executory Costs (9.3.21)
(9.3.5) Capital Lease Rent = 25,981,62 – 2,000 = 23,981.62

2. **Lessee Interest Rate**
(9.3.4) The Lessee Interest Rate is =

(a) The incremental interest rate the lessee would be charged to borrow the value of the item being leased or

(b) The Lessor Interest Rate (9.3.3) if known and is less than the Lessee's Incremental Interest Rate.

(9.3.4) The Lessee Interest Rate is = 10%

3. **Present Value Minimum Lease Payments for Lessee (9.3.12)**

$$\begin{aligned}\text{PV Minimum Lease Payments for Lessee} &= \text{Capital Lease Rent (9.3.5)} \\ &\quad \text{pvad[\$1, Lessee Interest Rate (9.3.4), Lease Term (9.3.2)]} \\ &\quad \text{pv[Guaranteed Residual Value (9.3.8), Lessee Interest Rate, Lease Term]} \\ &\quad \text{pv[Bargain Purchase Option (9.3.11), Lessee Interest Rate, Lease Term]} \\ &\quad \text{pv[Bogus Failure To Renew Penalty (9.3.10), Lessee Interest Rate, Lease Term]} \\ \text{PV Minimum Lease Payments for Lessee} &= 23{,}981.62 \quad \times \\ &\quad \text{pvad[\$1, 10\%, 5]} + \\ &\quad \text{pv[0, 10\%, 5]} \\ &= 23{,}981.62 \quad \times \\ &\quad 4.16986 \quad + \\ &\quad 0 \\ &= 100{,}000\end{aligned}$$

4. **Lessee Minimum Lease Payments Ratio (9.3.18)**

$$\text{Lessee Minimum Lease Payments Ratio} = \frac{\text{PV Minimum Lease Payments for Lessee (9.3.12)}}{\text{Leased Item Fair Value (9.3.6)}}$$

$$\begin{aligned}\text{Lessee Minimum Lease Payments Ratio} &= \frac{100{,}000}{100{,}000} \\ &= 1.0\end{aligned}$$

5. **Recovery Of Investment Test**
   If Lessee Minimum Lease Payments Ratio (9.3.18) >= 0.90 then:
   Capital Lease (9.3) for the Lessee (9.5).
   Since 1.0 >= 0.90 then Capital Lease (9.3) for the Lessee (9.5).

6. **Lessee Capitalized Amount (9.5.2)**

Lessee Capitalized Amount =	Capital Lease Rent (9.3.5)		×
	pvad($1, Lessee Interest Rate (9.3.4), Lease Term (9.3.2)		+
	pv(Bargain Purchase Option (9.3.11), Lesee Interest Rate, Lease Term)		+
	pv(Guaranteed Residual Value (9.3.8), Lesee Interest Rate, Lease Term)		
Lessee Capitalized Amount	= 23,981.62	× 4.16986 + 0	
	= 100,000.00		

Journal Entry

		Debit	Credit
01/01/XX	Capital Lease$_{item}$	(9.5.2)	
	Lease Liability (9.5.1)		(9.5.2)

		Debit	Credit
01/01/X3	Capital Lease$_{item}$	100,000	
	Lease Liability (9.5.1)		100,000

Ledger

Lease Liability

	01/01/X3 100,000
	balance 100,000

7. **Lease Liability Reduction, First Rent Payment (9.5.3)**

Lease Liability Reduction, First Rent Payment =	Lease Payment (9.3.23)		–
	Included Executory Costs (9.3.21)		
Lease Liability Reduction, First Rent Payment	= 25,981.62	– 2,000	
	= 23,981.62		

Journal Entry, Lessee's First Rent Payment
If Included Executory Costs (9.3.21) > 0 then:

		Debit	Credit
01/01/XX	Lease Liability (9.5.1)	(9.5.3)	
	Executory Expense$_{item}$	(9.3.21)	
	Cash		(9.3.23)

		Debit	Credit
01/01/X3	Lease Liability (9.5.1)	23,981.62	
	Executory Expense$_{item}$	2,000	
	Cash		25,981.62

Ledger

Lease Liability

	01/01/X3 100,000
01/01/X3 23,981.62	
	balance 76,018.38

8. **Lessee Interest Expense (9.5.5)**

Lessee Interest Expense =	Lease Liability (9.5.1) Balance ×		
	Lessee Interest Rate (9.3.4)		
Lessee Interest Expense	= 76,018.38	× 0.10	
	= 7,601.84		

Journal Entry

		Debit	Credit
12/31/XX	Interest Expense	(9.5.5)	
	Interest Payable		(9.5.5)

		Debit	Credit
12/31/X3	Interest Expense	7,601.84	
	Interest Payable		7,601.84

9. **Lessee Straight-Line Depreciation Denominator (9.5.6)**
   If Lessee Keeps the Leased Item then:
   Lessee Straight-Line Depreciation Denominator = Remaining Economic Years (9.3.15)
   If Lessee Returns the Leased Item then:
   Lessee Straight-Line Depreciation Denominator = Lease Term (9.3.2)

   Since Lessee Returns the Leased Item then:
   Lessee Straight-Line Depreciation Denominator = 5

10. **Lessee Depreciation Residual Value (9.5.7)**
    If Lessee Keeps the Leased Item then:
    Lessee Depreciation Residual Value = Residual Value (9.3.7)
    If Lessee Returns the Leased Item then:
    Lessee Depreciation Residual Value = Guaranteed Residual Value (9.3.8)

    Since Lessee Returns the Leased Item then:
    Lessee Depreciation Residual Value = Guaranteed Residual Value
    Lessee Depreciation Residual Value = 0

11. **Lessee Depreciation Expense (9.5.8)**

$$\text{Lessee Depreciation Expense} = \frac{\text{Capitalized Amount (9.5.2)} - \text{Lessee Depreciation Residual Value (9.5.7)}}{\text{Lessee Straight-Line Depreciation Denominator (9.5.6)}}$$

$$\text{Lessee Depreciation Expense} = \frac{100{,}000 - 0}{5} = 20{,}000$$

Journal Entry

		Debit	Credit
12/31/XX	Depreciation Expense	(9.5.8)	
	Accumulated Depreciation$_{item}$		(9.5.8)

		Debit	Credit
12/31/X3	Depreciation Expense	20,000	
	Accumulated Depreciation$_{item}$		20,000

12. **Lease Liability Reduction, Subsequent Rent Payments**

(9.5.9) Lease Liability Reduction, Subsequent Rent Payments = Lease Payment (9.3.23) – [Included Executory Costs (9.3.21) + Lessee Interest Expense (9.5.5)]

(9.5.9) Lease Liability Reduction, Subsequent Rent Payments = 25,981.62 – (2,000 + 7,601.84) = 16,379.78

13. **Journal Entry, Current Lease Liability**

		Debit	Credit
12/31/XX	Lease Liability	(9.5.9)	
	Current Lease Liability		(9.5.9)

		Debit	Credit
12/31/X3	Lease Liability	16,379.78	
	Current Lease Liability		16,379.78

Ledger

Lease Liability

	01/01/X3 100,000
01/01/X3 23,981.62	
12/31/X3 16,379.78	
	balance 59,638.60

14. **Reversing Entry, Current Lease Liability**

		Debit	Credit
12/31/XX	Current Lease Liability	(9.5.9)	
	Lease Liability		(9.5.9)

		Debit	Credit
12/31/X3	Current Lease Liability	16,379.78	
	Lease Liability		16,379.78

Ledger

Lease Liability

	01/01/X3 100,000
01/01/X3 23,981.62	
12/31/X3 16,379.78	
	12/31/X3 16,379.78
	balance 76,018.38

15. **Year Two Rent Payment Journal Entry**

Journal Entry, Lessee's Subsequent Rent Payments
If Included Executory Costs (9.3.21) > 0 then:

		Debit	Credit
XX/01/XX	Lease Liability (9.5.1)	(9.5.9)	
	Executory Expense$_{item}$	(9.3.21)	
	Interest Payable	(9.5.5)	
	Cash		(9.3.23)

		Debit	Credit
XX/01/X4	Lease Liability (9.5.1)	16,379.78	
	Executory Expense$_{item}$	2,000	
	Interest Payable	7,601.84	
	Cash		25,981.62

Ledger

Lease Liability

	01/01/X3 100,000
01/01/X3 23,981.62	
12/31/X3 16,379.78	
	12/31/X3 16,379.78
01/01/X4 16,379.78	
	balance 59,638.60

9.5 Capital Lease: Lessor

Example 72, 20X3:
Lease Term = 5 years.
Lease Payments = $25,981.62, due each January 1.
Age of Leased Item = brand new.
Fair Value of Leased Item = $100,000.
Estimated Economic Life = 5 years.
Estimated Residual Value = $0.
Annual property taxes lessee pays to lessor to pay the government = $2,000.
Item is returned at end of term.
Lessor's incremental borrowing rate = 10%.
Prepare two years of lessor's complete journal entries.
Solution 72:

1. **Capital Lease Rent**
   (9.3.5) Capital Lease Rent = Lease Payment (9.3.23) – Included Executory Costs (9.3.21)
   (9.3.5) Capital Lease Rent = 25,981,62 – 2,000 = 23,981.62

2. **Present Value Minimum Lease Payments for Lessor (9.3.13)**

PV Minimum Lease Payments for Lessor = Capital Lease Rent (9.3.5)
pvad[$1, Lessor Interest Rate (9.3.3), Lease Term (9.3.2)]
pv[Guaranteed Residual Value (9.3.8), Lessee Interest Rate, Lease Term]
pv[Bargain Purchase Option (9.3.11), Lessee Interest Rate, Lease Term]
pv[Third Party Guarantee (9.3.9), Lessor Interest Rate, Lease Term]
pv[Bogus Failure To Renew Penalty (9.3.10), Lessee Interest Rate, Lease Term]

PV Minimum Lease Payments for Lessor = 23,981.62 ×
4.16986 +
0
= 100,000

3. **Lessor Minimum Lease Payments Ratio**

$$\text{(9.3.19) Lessor Minimum Lease Payments Ratio} = \frac{\text{PV Minimum Lease Payments for Lessor (9.3.13)}}{\text{Leased Item Fair Value (9.3.6)}}$$

$$\text{(9.3.19) Lessor Minimum Lease Payments Ratio} = \frac{100{,}000}{100{,}000}$$
$$= 1.0$$

4. **Recovery Of Investment Test**

If Lessor Minimum Lease Payments Ratio (9.3.19) >= 0.90 then:
Capital Lease (9.3) for the Lessor (9.6).
Since 1.0 >= 0.90 then Capital Lease (9.3) for the Lessor (9.6).

5. **Lessor Receivable Amount**

(9.6.9) Lessor Receivable Amount = [Capital Lease Rent (9.3.5) ×
Lease Term (9.3.2)] +
Bargain Purchase Option (9.3.11) +
Residual Value (9.3.7) +
Guaranteed Residual Value (9.3.8) +
Bogus Failure To Renew Penalty (9.3.10) +
Third Party Guarantee (9.3.9)

(9.6.9) Lessor Receivable Amount = 23,981.62 × 5 + 0
= 119,908.10

6. **Lessor Unearned Interest Revenue**

(9.6.10) Lessor Unearned Interest Revenue = Lessor Receivable Amount (9.6.9) –
Leased Item Fair Value (9.3.6)

(9.6.10) Lessor Unearned Interest Revenue = 119,908.10 – 100,000
= 19,908.10

Journal Entry

		Debit	Credit
01/01/XX	Lease Receivable (9.6.8)	(9.6.9)	
	Equipment_{item}		Leased Item Fair Value (9.3.6)
	Lessor Unearned Interest Revenue		(9.6.10)

		Debit	Credit
01/01/X3	Lease Receivable (9.6.8)	119,908.10	
	Equipment_{item}		100,000
	Lessor Unearned Interest Revenue		19,908.10

Ledgers

Lease Receivable

01/01/X3 119,908.10	
balance 119,908.10	

Lessor Unearned Interest Revenue

	01/01/X3 19,908.10
	balance 19,908.10

7. **Rent Receipt**

If Included Executory Costs (9.3.21) > 0 then:

		Debit	Credit
01/01/XX	Cash	(9.3.23)	
	Lease Receivable (9.6.8)		(9.3.5)
	Executory Payable$_{item}$		(9.3.21)

		Debit	Credit
01/01/X3	Cash	25,981,62	
	Lease Receivable (9.6.8)		23,981.62
	Executory Payable$_{item}$		2,000

Ledger

Lease Receivable

01/01/X3 119,908.10	
	01/01/X3 23,981.62
balance 95,926.48	

8. **Net Lease Receivable**
   (9.6.13) Net Lease Receivable = Lease Receivable (9.6.8) Balance – Lessor Unearned Interest Revenue (9.6.10) Balance
   (9.6.13) Net Lease Receivable = 95,926.48 – 19,908.10
   = 76.018.38

9. **Lessor Interest Revenue**
   (9.6.14) Lessor Interest Revenue = Net Lease Receivable (9.6.13) × Lessor Interest Rate (9.3.3)
   (9.6.14) Lessor Interest Revenue = 76,018.38 × 0.10
   = 7,601.84

   Journal Entry

		Debit	Credit
12/31/XX	Lessor Unearned Interest Revenue (9.6.10)	(9.6.14)	
	Interest Revenue		(9.6.14)

		Debit	Credit
12/31/X3	Lessor Unearned Interest Revenue (9.6.10)	7,601.84	
	Interest Revenue		7,601.84

Ledger

Lessor Unearned Interest Revenue

	01/01/X3 19,908.10
12/31/X3 7,601.84	
	balance 12,306.26

10. **Rent Receipt, Year Two**
    If Included Executory Costs (9.3.21) > 0 then:

		Debit	Credit
01/01/XX	Cash	(9.3.23)	
	Lease Receivable (9.6.8)		(9.3.5)
	Executory Payable$_{item}$		(9.3.21)

		Debit	Credit
01/01/X4	Cash	25,981,62	
	Lease Receivable (9.6.8)		23,981.62
	Executory Payable$_{item}$		2,000

Ledgers

Lease Receivable

01/01/X3 119,908.10	
	01/01/X3 23,981.62
	01/01/X4 23,981.62
balance 71,944.86	

Ledger

Lessor Unearned Interest Revenue

	01/01/X3 19,908.10
12/31/X3 7,601.84	
	balance 12,306.26

11. **Net Lease Receivable**

(9.6.13) Net Lease Receivable = Lease Receivable (9.6.8) Balance – Lessor Unearned Interest Revenue (9.6.10) Balance

(9.6.13) Net Lease Receivable = 71,944.86 – 12,306.26
= 59.638.60

12. **Lessor Interest Revenue**

(9.6.14) Lessor Interest Revenue = Net Lease Receivable (9.6.13) × Lessor Interest Rate (9.3.3)

(9.6.14) Lessor Interest Revenue = 59,638.60 × 0.10
= 5,963.86

Journal Entry

		Debit	Credit
12/31/XX	Lessor Unearned Interest Revenue (9.6.10)	(9.6.14)	
	Interest Revenue		(9.6.14)
		Debit	Credit
12/31/X4	Lessor Unearned Interest Revenue (9.6.10)	5,963.86	
	Interest Revenue		5,963.86

Ledger

Lessor Unearned Interest Revenue

	01/01/X3 19,908.10
12/31/X3 7,601.84	
12/31/X4 5,963.86	
	balance 6,342.40

Chapter 10

Retirement Benefit Plan Examples

10.1 Defined Benefit Plan: Simple

Example 73, 20X6:
Beale Management has a Defined Benefit Plan with the following characteristics (in Millions):
Plan Assets, 01/01/X6 = $500.
Projected Benefit Obligation, 01/01/X6 = $480.
Accumulated Benefit Obligation, 12/31/X6 = $585. (← Unrealistically high)
Annual Service Cost = $82.
Settlement Rate = 5%. (← Unrealistically low)
Plan Assets Expected Rate of Return = 9%.
Actual return on plan assets = $40.
Contributions = $70.
Benefits paid to retirees during the year = $40.
Unrecognized Prior Service Cost, 01/01/X6 = $48.
Prior Service Cost amortization = $8.
Unrecognized Net Gain/Loss, 01/01/X6 = $80 gain.
Average Remaining Service-Years Participating Employees = 15.
Prepaid/Accrued Pension Cost, 01/01/X6 = $12 Accrued Cost.
Projected Benefit Obligation liability gain = $10.
Prepare the journal entry to record the textbook pension expense and funding.
Prepare the journal entry to record the additional pension liability.

Solution 73:
Initial Ledger Balances

Plan Assets	
01/01/X6 500 (10.1.9)	
balance 500	

Projected Benefit Obligation	
	01/01/X6 480 (10.1.5)
	balance 480

Unrecognized Net Gain/Loss	
	01/01/X6 80 (10.6.1)
	balance 80

Unrecognized Prior Service Cost	
01/01/X6 48 (10.3.1)	
balance 48	

Prepaid/Accrued Pension Cost	
	01/01/X6 12 (10.2)
	balance 12

1. **Textbook: Populate Retained Earnings Beginning Balance (10.10.1)**

Retained Earnings

	01/01/X6 24
	balance 24

2. **Textbook: Close Prepaid/Accrued Pension Cost (10.10.2)**
Journal Entry, If Accrued Pension Cost

		Debit	Credit
01/01/XX	Prepaid/Accrued Pension Cost (10.2)	(10.2) Balance	
	Retained Earnings		(10.2) Balance

		Debit	Credit
01/01/X6	Prepaid/Accrued Pension Cost (10.2)	12	
	Retained Earnings		12

Ledgers

Prepaid/Accrued Pension Cost

	01/01/X6 12
01/01/X6 12 (10.10.2)	
	balance 0

Retained Earnings

01/01/X6 24	
	01/01/X6 12 (10.10.2)
balance 12	

3. **Service Cost (10.1.13)**

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.1.13)	
	Projected Benefit Obligation (10.1.5)		(10.1.13)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	82	
	Projected Benefit Obligation (10.1.5)		82

Ledgers

Pension Expense

12/31/X6 82 (10.1.13)	
balance 82	

Projected Benefit Obligation

	01/01/X6 480 (10.1.5)
	12/31/X6 82 (10.1.13)
	balance 562

4. **Interest Cost (10.1.12)**
Interest Cost = Projected Benefit Obligation (10.1.5) Beginning Balance × Settlement Rate (10.1.11)
Interest Cost = $480 \times 0.05 = 24$
Journal Entry

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.1.12)	
	Projected Benefit Obligation (10.1.5)		(10.1.12)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	24	
	Projected Benefit Obligation (10.1.5)		24

Ledgers

Pension Expense

12/31/X6 82 (10.1.13)	
12/31/X6 24 (10.1.12)	
balance 106	

Projected Benefit Obligation

	01/01/X6 480 (10.1.5)
	12/31/X6 82 (10.1.13)
	12/31/X6 24 (10.1.12)
	balance 586

5. **Plan Assets Return (10.1.14)**

		Debit	Credit
12/31/XX	Plan Assets (10.1.9)	(10.1.14)	
	Pension Expense (10.1.10)		(10.1.14)

		Debit	Credit
12/31/X6	Plan Assets (10.1.9)	40	
	Pension Expense (10.1.10)		40

Ledgers

Plan Assets

01/01/X6 500 (10.1.9)	
12/31/X6 40 (10.1.14)	
balance 540	

Pension Expense

12/31/X6 82 (10.1.13)	
12/31/X6 24 (10.1.12)	
	12/31/X6 40 (10.1.14)
balance 66	

6. **Pension Contributions (10.1.15)**

		Debit	Credit
12/31/XX	Plan Assets (10.1.9)	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X6	Plan Assets (10.1.9)	70	
	Cash		70

Ledgers

Plan Assets

01/01/X6 500 (10.1.9)	
12/31/X6 40 (10.1.14)	
12/31/X6 70 (10.1.15)	
balance 610	

Cash

	12/31/X6 70 (10.1.15)
	balance 70

7. **Benefits Paid (10.1.16)**

		Debit	Credit
12/31/XX	Projected Benefit Obligation (10.1.5)	(10.1.16)	
	Plan Assets (10.1.9)		(10.1.16)

		Debit	Credit
12/31/X6	Projected Benefit Obligation (10.1.5)	40	
	Plan Assets (10.1.9)		40

Ledgers

Plan Assets

01/01/X6 500 (10.1.9)	
12/31/X6 40 (10.1.14)	
12/31/X6 70 (10.1.15)	
	12/31/X6 40 (10.1.16)
balance 570	

Projected Benefit Obligation

	01/01/X6 480 (10.1.5)
	12/31/X6 82 (10.1.13)
	12/31/X6 24 (10.1.12)
12/31/X6 40 (10.1.16)	
	balance 546

8. **Amortization PSC: Average Remaining Years (10.4.1)**

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.4.1)	
	Unrecognized Prior Service Cost (10.3.1)		(10.4.1)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	8	
	Unrecognized Prior Service Cost (10.3.1)		8

Ledgers

Pension Expense

12/31/X6 82 (10.1.13)	
12/31/X6 24 (10.1.12)	
	12/31/X6 40 (10.1.16)
12/31/X6 8 (10.4.1)	
balance 74	

Unrecognized Prior Service Cost

01/01/X6 48 (10.3.1)	
	01/01/X6 8 (10.4.1)
balance 40	

9. **Plan Assets Expected Return (10.6.3)**

Plan Assets Expected Return = Plan Assets (10.1.9) Beginning Balance × Plan Assets Expected Rate of Return (10.6.2)

Plan Assets Expected Return = 500 × 0.09 = 45

10. **Unexpected Net Gain/(Loss) (10.6.4)**

Unexpected Net Gain/(Loss) = Plan Assets Return (10.1.14) – Plan Assets Expected Return (10.6.3)

Unexpected Net Gain/(Loss) = 40 – 45 = -5

Journal Entry, If Unexpected Net (Loss)

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss (10.6.1)	(10.6.4)	
	Pension Expense (10.1.10)		(10.6.4)

		Debit	Credit
12/31/X6	Unrecognized Net Gain/Loss (10.6.1)	5	
	Pension Expense (10.1.10)		5

Ledgers

Pension Expense

12/31/X6 82 (10.1.13)	
12/31/X6 24 (10.1.12)	
	12/31/X6 40 (10.1.16)
12/31/X6 8 (10.4.1)	
	12/31/X6 5 (10.6.4)
balance 69	

Unrecognized Net Gain/Loss

	01/01/X6 80 (10.6.1)
12/31/X6 5 (10.6.4)	
	balance 75

11. **Liability Gain/(Loss) (10.6.5)**

Journal Entry, If Liability Gain

		Debit	Credit
12/31/XX	Projected Benefit Obligation (10.1.5)	(10.6.5)	
	Unrecognized Net Gain/Loss (10.6.1)		(10.6.5)

		Debit	Credit
12/31/X6	Projected Benefit Obligation (10.1.5)	10	
	Unrecognized Net Gain/Loss (10.6.1)		10

Ledgers

Projected Benefit Obligation

	01/01/X6 480 (10.1.5)
	12/31/X6 82 (10.1.13)
	12/31/X6 24 (10.1.12)
12/31/X6 40 (10.1.16)	
12/31/X6 10 (10.6.5)	
	balance 536

Unrecognized Net Gain/Loss

	01/01/X6 80 (10.6.1)
12/31/X6 5 (10.6.4)	
	12/31/X6 10 (10.6.5)
	balance 85

12. **Projected Benefit Obligation Corridor (10.6.6)**

Projected Benefit Obligation Corridor = Projected Benefit Obligation (10.1.5) Beginning Balance × 0.10

Projected Benefit Obligation Corridor = 480 × 0.10 = 48

13. **Plan Assets Corridor (10.6.7)**

Plan Assets Corridor = Plan Assets (10.1.9) Beginning Balance × 0.10

Plan Assets Corridor = 500 × 0.10 = 50

14. **Corridor Amount (10.6.8)**

If Projected Benefit Obligation Corridor (10.6.6) > Plan Assets Corridor (10.6.7) then:
Corridor Amount = Projected Benefit Obligation Corridor (10.6.6)

If Plan Assets Corridor (10.6.7) > Projected Benefit Obligation Corridor (10.6.6) then:
Corridor Amount = Plan Assets Corridor (10.6.7)

Corridor Amount = 50

15. **Possible Corridor Amortization (10.6.9)**

Possible Corridor Amortization = Unrecognized Net Gain/Loss (10.6.1) Beginning Balance – Corridor Amount (10.6.8)

Possible Corridor Amortization = 80 – 50 = 30

16. **Corridor Amortization (10.6.13)**

$$\text{Corridor Amortization} = \frac{\text{Possible Corridor Amortization (10.6.9)}}{\text{Average Remaining Service-Years Participating Employees (10.6.12)}}$$

$$\text{Corridor Amortization} = \frac{30}{15} = 2$$

Journal Entry, If Possible Corridor Amortization (10.6.9) > 0 then:
Journal Entry, If Corridor Amount (10.6.8) = Plan Assets Corridor (10.6.7)

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss (10.6.1)	(10.6.13)	
	Pension Expense (10.1.10)		(10.6.13)

		Debit	Credit
12/31/X6	Unrecognized Net Gain/Loss (10.6.1)	2	
	Pension Expense (10.1.10)		2

Ledgers

Pension Expense	
12/31/X6 82 (10.1.13)	
12/31/X6 24 (10.1.12)	
	12/31/X6 40 (10.1.16)
12/31/X6 8 (10.4.1)	
	12/31/X6 5 (10.6.4)
	12/31/X6 2 (10.6.13)
balance 67	

Unrecognized Net Gain/Loss	
	01/01/X6 80 (10.6.1)
12/31/X6 5 (10.6.4)	
	12/31/X6 10 (10.6.5)
12/31/X6 2 (10.6.13)	
	balance 83

17. **Pension Identity Table (10.7)**

Assets	Liabilities
Plan Assets (10.1.9)	Projected Benefit Obligation (10.1.5)
Unrecognized Prior Service Costs (10.3)	Accrued Pension Cost (10.2)
Prepaid Pension Cost (10.2)	
(Cash) (10.1.15)	
Total Assets	Total Liabilities
	Equity
	(Pension Expense) (10.1.10)
	Unrecognized Net Gain (10.6.1)
	(Unrecognized Net Loss) (10.6.1)
	Retained Earnings
	Total Equity

Pension Identity Table (10.7)

Assets	Liabilities
Plan Assets 570	Projected Benefit Obligation 536
Unrecognized Prior Service Costs 40	Accrued Pension Cost 0
Prepaid Pension Cost 0	
(Cash) (70)	
540	536
	Equity
	(Pension Expense) (67)
	Unrecognized Net Gain 83
	(Unrecognized Net Loss) 0
	Retained Earnings (12)
	4

18. **Textbook: Calculate Prepaid/Accrued Journal Entry (10.10.5)**

Textbook Prepaid/Accrued = Pension Contributions (10.1.15) – Pension Expense (10.1.10) ending balance

Textbook Prepaid/Accrued = 70 – 67 = 3

Textbook Journal Entry, If Textbook Prepaid/Accrued > 0

		Debit	Credit
12/31/XX	Pension Expense	(10.1.10) Balance	
	Prepaid/Accrued Pension Cost	Textbook Prepaid/Accrued (10.10.5)	
	Cash		Pension Contributions (10.1.15)

		Debit	Credit
12/31/X6	Pension Expense	67	
	Prepaid/Accrued Pension Cost	3	
	Cash		70

Note: This journal entry is the answer to the textbook problem. Do not perform this journal entry in your records.

19. **Projected Benefit Obligation and Plan Assets Closing Entries (10.8.1)**

		Debit	Credit
12/31/XX	Projected Benefit Obligation (10.1.5)	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost (10.2)		(10.1.5) Ending Balance

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost (10.2)	(10.1.9) Ending Balance	
	Plan Assets (10.1.9)		(10.1.9) Ending Balance

		Debit	Credit
12/31/X6	Projected Benefit Obligation (10.1.5)	536	
	Prepaid/Accrued Pension Cost (10.2)		536

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost (10.2)	570	
	Plan Assets (10.1.9)		570

Ledgers

Projected Benefit Obligation

	01/01/X6 480 (10.1.5)
	12/31/X6 82 (10.1.13)
	12/31/X6 24 (10.1.12)
12/31/X6 40 (10.1.16)	
12/31/X6 10 (10.6.5)	
12/31/X6 536 (10.8.1)	
	balance 0

Plan Assets

01/01/X6 500 (10.1.9)	
12/31/X6 40 (10.1.14)	
12/31/X6 70 (10.1.15)	
	12/31/X6 40 (10.1.16)
	12/31/X6 570 (10.8.1)
balance 0	

Prepaid/Accrued Pension Cost

	01/01/X6 12
01/01/X6 12 (10.10.2)	
	12/31/X6 536 (10.8.1)
12/31/X6 570 (10.8.1)	
balance 34	

20. **Unrecognized Prior Service Cost Closing Entry (10.8.3)**

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost (10.2)	(10.3.1) Ending Balance	
	Unrecognized Prior Service Cost (10.3.1)		(10.3.1) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost (10.2)	40	
	Unrecognized Prior Service Cost (10.3.1)		40

Ledgers

Prepaid/Accrued Pension Cost

	01/01/X6 12
01/01/X6 12 (10.10.2)	
	12/31/X6 536 (10.8.1)
12/31/X6 570 (10.8.1)	
12/31/X6 40 (10.8.3)	
balance 74	

Unrecognized Prior Service Cost

01/01/X6 48 (10.3.1)	
	01/01/X6 8 (10.4.1)
	12/31/X6 40 (10.8.3)
balance 0	

21. **Unrecognized Net Gain/Loss Closing Entry (10.8.5)**
Journal Entry, If Debit Balance

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Costs (10.2)	(10.6.1) Ending Balance	
	Unrecognized Net Gain/Loss (10.6.1)		(10.6.1) Ending Balance

Journal Entry, If Credit Balance

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss (10.6.1)	(10.6.1) Ending Balance	
	Prepaid/Accrued Pension Costs (10.2)		(10.6.1) Ending Balance

		Debit	Credit
12/31/X6	Unrecognized Net Gain/Loss (10.6.1)	83	
	Prepaid/Accrued Pension Costs (10.2)		83

Ledgers

Prepaid/Accrued Pension Cost

	01/01/X6 12
01/01/X6 12 (10.10.2)	
	12/31/X6 536 (10.8.1)
12/31/X6 570 (10.8.1)	
12/31/X6 40 (10.8.3)	
	12/31/X6 83 (10.8.5)
	balance 9

Unrecognized Net Gain/Loss

	01/01/X6 80 (10.6.1)
12/31/X6 5 (10.6.4)	
	12/31/X6 10 (10.6.5)
12/31/X6 2 (10.6.13)	
12/31/X6 83 (10.8.5)	
	balance 0

22. **Pension Identity Table (10.7)**

Assets	Liabilities
Plan Assets (10.1.9)	Projected Benefit Obligation (10.1.5)
Unrecognized Prior Service Costs (10.3)	Accrued Pension Cost (10.2)
Prepaid Pension Cost (10.2)	
(Cash) (10.1.15)	
Total Assets	Total Liabilities
	Equity
	(Pension Expense) (10.1.10)
	Unrecognized Net Gain (10.6.1)
	(Unrecognized Net Loss) (10.6.1)
	Retained Earnings
	Total Equity

Pension Identity Table (10.7)

Assets	Liabilities
Plan Assets 0	Projected Benefit Obligation 0
Unrecognized Prior Service Costs 0	Accrued Pension Cost 9
Prepaid Pension Cost 0	
(Cash) (70)	
(70)	9
	Equity
	(Pension Expense) (67)
	Unrecognized Net Gain 0
	(Unrecognized Net Loss) 0
	Retained Earnings (12)
	(79)

23. **Unfunded Accumulated Benefit Obligation (10.9.3)**
Unfunded Accumulated Benefit Obligation = Accumulated Benefit Obligation (10.1.6) – Plan Assets Ending Balance (before Prepaid/Accrued Cost close) (10.8.1)
Unfunded Accumulated Benefit Obligation = 585 – 570 = 15

24. **Additional Pension Liability Ending Balance (10.9.4)**
If Prepaid/Accrued Pension Cost (10.2) Ending Balance is a credit amount then:
Additional Pension Liability Ending Balance = Unfunded Accumulated Benefit Obligation (10.9.3) – Prepaid/Accrued Pension Cost (10.2) Ending Balance
If Prepaid/Accrued Pension Cost (10.2) Ending Balance is a debit amount then:
Additional Pension Liability Ending Balance = Unfunded Accumulated Benefit Obligation (10.9.3) + Prepaid/Accrued Pension Cost (10.2) Ending Balance
Additional Pension Liability Ending Balance = 15 – 9 = 6

If Additional Pension Liability Ending Balance < 0 then:
Additional Pension Liability Ending Balance = 0

25. **Additional Pension Liability Adjustment (10.9.5)**
Additional Pension Liability Adjustment = Additional Pension Liability Ending Balance (10.9.4) – Additional Pension Liability (10.9.1) Beginning Balance

Additional Pension Liability Adjustment = 6 – 0 = 6

Journal Entry, If Additional Pension Liability Adjustment > 0

		Debit	Credit
12/31/XX	Deferred Pension Cost (10.9.2)	(10.9.5)	
	Additional Pension Liability (10.9.1)		(10.9.5)

		Debit	Credit
12/31/X6	Deferred Pension Cost (10.9.2)	6	
	Additional Pension Liability (10.9.1)		6

10.2 Defined Benefit Plan: Complex

Example 74, 20X6:
Allied Services, Inc. has a Defined Benefit Plan with the following characteristics (in Millions).
Plan Assets, 01/01/X6 = $900.
Projected Benefit Obligation, 01/01/X6 = $875.
Annual Service Cost = $31.
Settlement Rate = 8%.
Plan Assets Expected Rate of Return = 8%.
Actual return on plan assets = $90.
Contributions = $16.
Benefits paid to retirees during the year = $22.
Prior Service Grant, 01/01/X6 = $75.
Average Remaining Service-Years Participating Employees = 15.
Unrecognized Net Gain/Loss Beginning Balance = $13 loss.
Projected Benefit Obligation liability loss = $10.
What is the Pension Expense?
What is the Projected Benefit Obligation 12/31/X6 Balance before closing.
What is the Plan Assets 12/31/X6 Balance before closing.
What is the Prepaid/Accrued Pension Cost balance to be reported on the balance sheet?

Solution 74:

Initial Ledger Balances

Plan Assets

01/01/X6 900 (10.1.9)	
balance 900	

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	balance 875

Unrecognized Net Gain/Loss

01/01/X6 13 (10.6.1)	
balance 13	

1. **Prior Service Grants (10.3)**

		Debit	Credit
01/01/XX	Unrecognized Prior Service Cost (10.3.1)	(10.3)	
	Projected Benefit Obligation (10.1.5)		(10.3)

		Debit	Credit
01/01/X6	Unrecognized Prior Service Cost (10.3.1)	75	
	Projected Benefit Obligation (10.1.5)		75

Ledgers

Unrecognized Prior Service Cost

01/01/X6 75 (10.3)	
balance 75	

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	01/01/X6 75 (10.3)
	balance 950

2. **Interest Cost (10.1.12)**
   Interest Cost = Projected Benefit Obligation (10.1.5) Beginning Balance × Settlement Rate (10.1.11)
   Interest Cost = 950 × 0.08 = 76

   Journal Entry

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.1.12)	
	Projected Benefit Obligation (10.1.5)		(10.1.12)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	76	
	Projected Benefit Obligation (10.1.5)		76

   Ledger Balances

Pension Expense

12/31/X6 76 (10.1.12)	
balance 76	

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	01/01/X6 75 (10.3)
	12/31/X6 76 (10.1.12)
	balance 1026

3. **Service Cost (10.1.13)**

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.1.13)	
	Projected Benefit Obligation (10.1.5)		(10.1.13)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	31	
	Projected Benefit Obligation (10.1.5)		31

   Ledger Balances

Pension Expense

12/31/X6 76 (10.1.12)	
12/31/X6 31 (10.1.13)	
balance 107	

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	01/01/X6 75 (10.3)
	12/31/X6 76 (10.1.12)
	12/31/X6 31 (10.1.13)
	balance 1057

4. **Plan Assets Return (10.1.14)**
   Journal Entry, If Increase

		Debit	Credit
12/31/XX	Plan Assets (10.1.9)	(10.1.14)	
	Pension Expense (10.1.10)		(10.1.14)

		Debit	Credit
12/31/X6	Plan Assets (10.1.9)	90	
	Pension Expense (10.1.10)		90

   Ledger Balances

Plan Assets

01/01/X6 900 (10.1.9)	
12/31/X6 90 (10.1.9)	
balance 990	

Pension Expense

12/31/X6 76 (10.1.12)	
12/31/X6 31 (10.1.13)	
	12/31/X6 90 (10.1.14)
balance 17	

5. **Pension Contributions (10.1.15)**

		Debit	Credit
12/31/XX	Plan Assets (10.1.9)	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X6	Plan Assets (10.1.9)	16	
	Cash		16

Ledger Balance

Plan Assets

01/01/X6 900 (10.1.9)	
12/31/X6 90 (10.1.9)	
12/31/X6 16 (10.1.15)	
balance 1006	

6. **Benefits Paid (10.1.16)**

		Debit	Credit
12/31/XX	Projected Benefit Obligation (10.1.5)	(10.1.16)	
	Plan Assets (10.1.9)		(10.1.16)

		Debit	Credit
12/31/X6	Projected Benefit Obligation (10.1.5)	22	
	Plan Assets (10.1.9)		22

Ledger Balances

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	01/01/X6 75 (10.3)
	12/31/X6 76 (10.1.12)
	12/31/X6 31 (10.1.13)
12/31/X6 22 (10.1.16)	
	balance 1035

Plan Assets

01/01/X6 900 (10.1.9)	
12/31/X6 90 (10.1.9)	
12/31/X6 16 (10.1.15)	
	12/31/X6 22 (10.1.16)
balance 984	

Plan Assets 12/31/X6 Balance = $984

7. **Amorization Using Average Remaining Years (10.4.1)**

$$\text{Amortization Using Average Remaining Years} = \frac{\text{Prior Service Grants (10.3)}}{\text{Average Remaining Service-Years Participating Employees (10.6.12)}}$$

$$\text{Amortization Using Average Remaining Years} = \frac{75}{15} = 5$$

Journal Entry

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.4.1)	
	Unrecognized Prior Service Cost (10.3.1)		(10.4.1)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	5	
	Unrecognized Prior Service Cost (10.3.1)		5

Ledger Balances

Pension Expense

12/31/X6 76 (10.1.12)	
12/31/X6 31 (10.1.13)	
	12/31/X6 90 (10.1.14)
12/31/X6 5 (10.4.1)	
balance 22	

Unrecognized Prior Service Cost

01/01/X6 75 (10.3)	
	12/31/X6 5 (10.3)
balance 70	

8. **Plan Assets Expected Return (10.6.3)**
   Plan Assets Expected Return = Plan Assets (10.1.9) Beginning Balance × Plan Assets Expected Rate of Return (10.6.2)
   Plan Assets Expected Return = 900 × 0.08 = 72

9. **Unexpected Net Gain/(Loss) (10.6.4)**
   Unexpected Net Gain/(Loss) = Plan Assets Return (10.1.14) – Plan Assets Expected Return (10.6.3)
   Unexpected Net Gain/(Loss) = 90 – 72 = 18

Journal Entry, If Unexpected Net Gain

		Debit	Credit
12/31/XX	Pension Expense (10.1.10)	(10.6.4)	
	Unrecognized Net Gain/Loss (10.6.1)		(10.6.4)

		Debit	Credit
12/31/X6	Pension Expense (10.1.10)	18	
	Unrecognized Net Gain/Loss		18

Ledger Balances

Pension Expense

12/31/X6 76 (10.1.12)	
12/31/X6 31 (10.1.13)	
	12/31/X6 90 (10.1.14)
12/31/X6 5 (10.4.1)	
12/31/X6 18 (10.6.4)	
balance 40	

Pension Expense = $40

Unrecognized Net Gain/Loss

01/01/X6 13 (10.6.1)	
	12/31/X6 18 (10.6.4)
	balance 5

10. **Liability Gain/(Loss) (10.6.5)**
    Journal Entry, If Liability (Loss)

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss (10.6.1)	(10.6.5)	
	Projected Benefit Obligation (10.1.5)		(10.6.5)

		Debit	Credit
12/31/X6	Unrecognized Net Gain/Loss (10.6.1)	10	
	Projected Benefit Obligation (10.1.5)		10

Ledger Balances

Unrecognized Net Gain/Loss

01/01/X6 13 (10.6.1)	
	12/31/X6 18 (10.6.4)
12/31/X6 10 (10.6.5)	
balance 5	

Projected Benefit Obligation

	01/01/X6 875 (10.1.5)
	01/01/X6 75 (10.3)
	12/31/X6 76 (10.1.12)
	12/31/X6 31 (10.1.13)
12/31/X6 22 (10.1.16)	
	12/31/X6 10 (10.6.5)
	balance 1045

Projected Benefit Obligation 12/31/X6 Balance = $1045

11. **Projected Benefit Obligation Corridor (10.6.6)**
    Projected Benefit Obligation Corridor = Projected Benefit Obligation (10.1.5) Beginning Balance × 0.10
    Projected Benefit Obligation Corridor = 875 × 0.10 = 87.5

12. **Plan Assets Corridor (10.6.7)**
    Plan Assets Corridor = Plan Assets (10.1.9) Beginning Balance × 0.10
    Plan Assets Corridor = 900 × 0.10 = 90

13. **Corridor Amount (10.6.8)**
    If Projected Benefit Obligation Corridor (10.6.6) > Plan Assets Corridor (10.6.7) then:
    Corridor Amount = Projected Benefit Obligation Corridor (10.6.6)
    If Plan Assets Corridor (10.6.7) > Projected Benefit Obligation Corridor (10.6.6) then:
    Corridor Amount = Plan Assets Corridor (10.6.7)
    Since Plan Assets Corridor ($90) > Projected Benefit Obligation Corridor ($87.5) then:
    Corridor Amount = Plan Assets Corridor ($90)

14. **Possible Corridor Amortization (10.6.9)**
    Possible Corridor Amortization = Unrecognized Net Gain/Loss (10.6.1) Beginning Balance – Corridor Amount (10.6.8)
    Possible Corridor Amortization = 13 – 90 = -77

Since Possible Corridor Amortization < 0 then Smoothing Gains and Losses (10.6) is complete.

15. **Projected Benefit Obligation and Plan Assets Closing Entries (10.8.1)**

		Debit	Credit
12/31/XX	Projected Benefit Obligation (10.1.5)	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost (10.2)		(10.1.5) Ending Balance

		Debit	Credit
12/31/X6	Projected Benefit Obligation (10.1.5)	1045	
	Prepaid/Accrued Pension Cost (10.2)		1045

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost (10.2)	(10.1.9) Ending Balance	
	Plan Assets (10.1.9)		(10.1.9) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost (10.2)	984	
	Plan Assets (10.1.9)		984

Ledger

Prepaid/Accrued Pension Cost

	12/31/X6 1045 (10.1.5)
12/31/X6 984 (10.1.9)	
	balance 61

16. **Unrecognized Prior Service Cost Closing Entry (10.8.3)**

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost (10.2)	(10.3.1) Ending Balance	
	Unrecognized Prior Service Cost (10.3.1)		(10.3.1) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost (10.2)	70	
	Unrecognized Prior Service Cost (10.3.1)		70

Ledger

Prepaid/Accrued Pension Cost

	12/31/X6 1045 (10.1.5)
12/31/X6 984 (10.1.9)	
12/31/X6 70 (10.3.1)	
balance 9	

17. **Unrecognized Net Gain/Loss Closing Entry (10.8.5)**
Journal Entry, If Debit Balance

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Costs (10.2)	(10.6.1) Ending Balance	
	Unrecognized Net Gain/Loss (10.6.1)		(10.6.1) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Costs (10.2)	5	
	Unrecognized Net Gain/Loss (10.6.1)		5

Ledger

Prepaid/Accrued Pension Cost

	12/31/X6 1045 (10.1.5)
12/31/X6 984 (10.1.9)	
12/31/X6 70 (10.3.1)	
12/31/X6 5 (10.6.1)	
balance 14	

Report Prepaid/Accrued Pension Cost balance = $14 Prepaid Pension Asset.

10.3 Defined Benefit Plan: 20X3

Example 75, 20X3:
Plan Assets, 01/01/X3 = $100,000.
Projected Benefit Obligation, 01/01/X3 = $100,000.
Annual Service Cost = $9,000.
Settlement Rate = 10%.
Actual return on plan assets = $10,000.
Contributions = $8,000.
Benefits paid to retirees during the year = $7,000.
What is the Pension Expense?
What is the Prepaid/Accrued Pension Cost Balance?

Solution 75:

Initial Ledger Balances

Plan Assets

01/01/X3 100,000 (10.1.9)	
balance 100,000	

Projected Benefit Obligation

	01/01/X3 100,000 (10.1.5)
	balance 100,000

1. **Journal Entry for Interest Cost**
   (10.1.12) Interest Cost = Projected Benefit Obligation (10.1.5) × Settlement Rate (10.1.11)

   (10.1.12) Interest Cost = 100,000 (10.1.5) × 0.10 (10.1.11)
   = 10,000

   Journal Entry

		Debit	Credit
12/31/XX	Pension Expense	10,000 (10.1.12)	
	Projected Benefit Obligation		10,000 (10.1.12)

   Ledgers

Pension Expense

12/31/X3 10,000 (10.1.12)	
balance 10,000	

Projected Benefit Obligation

	01/01/X3 100,000
	12/31/X3 10,000 (10.1.12)
	balance 110,000

2. **Journal Entry for Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.1.13)	
	Projected Benefit Obligation		(10.1.13)

		Debit	Credit
12/31/X3	Pension Expense	9,000	
	Projected Benefit Obligation		9,000

   Ledgers

Pension Expense

12/31/X3 10,000 (10.1.12)	
12/31/X3 9,000 (10.1.13)	
balance 19,000	

Projected Benefit Obligation

	01/01/X3 100,000
	12/31/X3 10,000 (10.1.12)
	12/31/X3 9,000 (10.1.13)
	balance 119,000

3. **Journal Entry for Plan Assets Increase**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.14)	
	Pension Expense		(10.1.14)

		Debit	Credit
12/31/X3	Plan Assets	10,000	
	Pension Expense		10,000

   Ledgers

Pension Expense

12/31/X3 10,000 (10.1.12)	
12/31/X3 9,000 (10.1.13)	
	12/31/X3 10,000 (10.1.14)
balance 9,000	

Pension Expense = $9,000.

Plan Assets

01/01/X3 100,000 (10.1.9)	
12/31/X3 10,000 (10.1.14)	
balance 110,000	

4. **Journal Entry for Contributions**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X3	Plan Assets	8,000	
	Cash		8,000

Ledger

Plan Assets

01/01/X3 100,000 (10.1.9)	
12/31/X3 10,000 (10.1.14)	
12/31/X3 8,000 (10.1.15)	
balance 118,000	

5. **Journal Entry for Benefits Paid**

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.16)	
	Plan Assets		(10.1.16)

		Debit	Credit
12/31/X3	Projected Benefit Obligation	7,000	
	Plan Assets		7,000

Ledgers

Plan Assets

01/01/X3 100,000 (10.1.9)	
12/31/X3 10,000 (10.1.14)	
12/31/X3 8,000 (10.1.15)	
12/31/X3	7,000 (10.1.16)
balance 111,000	

Projected Benefit Obligation

	01/01/X3 100,000
	12/31/X3 10,000 (10.1.12)
	12/31/X3 9,000 (10.1.13)
12/31/X3 7,000 (10.1.16)	
	balance 112,000

6. **Closing Journal Entries**

Closing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.5) Ending Balance

		Debit	Credit
12/31/X3	Projected Benefit Obligation	112,000	
	Prepaid/Accrued Pension Cost		112,000

Closing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.9) Ending Balance	
	Plan Assets		(10.1.9) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Pension Cost	111,000	
	Plan Assets		111,000

Ledger

Prepaid/Accrued Pension Cost

	12/31/X3 112,000 (10.1.5)
12/31/X3 111,000 (10.1.9)	
	balance 1,000

Prepaid/Accrued Pension Cost = $1,000 Accrued Pension Cost.

7. **Reversing Journal Entries**

Reversing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.5) Ending Balance	
	Projected Benefit Obligation		(10.1.5) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Pension Cost	112,000	
	Projected Benefit Obligation		112,000

Reversing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Plan Assets	(10.1.9) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.9) Ending Balance

		Debit	Credit
12/31/X3	Plan Assets	111,000	
	Prepaid/Accrued Pension Cost		111,000

Ledger

Prepaid/Accrued Pension Cost

	12/31/X3 112,000 (10.1.5)
12/31/X3 111,000 (10.1.9)	
12/31/X3 112,000 (10.1.5)	
	12/31/X3 111,000 (10.1.9)
	balance 0

10.4 Defined Benefit Plan: 20X4

Example 76, 20X4:
Projected Benefit Obligation, 01/01/X4 = $112,000.
Plan Assets, 01/01/X4 = $111,100.
Prior Service Grant, 01/01/X4 = $80,000.
Accumulated Benefit Obligation, 12/31/X4 = $164,000.
Annual Service Cost = $9,500.
Settlement Rate = 10%.
Actual return on plan assets = $11,100.
Contributions = $20,000.
Benefits paid to retirees during the year = $8,000.
Prior Service Grant, 01/01/X4 = $80,000.
Amortization of Prior Service Cost = $27,200.
What is the Pension Expense?
What is the Prepaid/Accrued Pension Cost Balance?
What is the Deferred Pension Cost Ending Balance?
What is the Additional Pension Liability Ending Balance?

Solution 76:

Initial Ledger Balances

Plan Assets

01/01/X4 111,000 (10.1.9)	
balance 111,000	

Projected Benefit Obligation

	01/01/X4 112,000 (10.1.5)
	balance 112,000

1. **Journal Entry for Prior Service Grant**

		Debit	Credit
01/01/XX	Unrecognized Prior Service Cost	(10.3.1)	
	Projected Benefit Obligation		(10.3.1)

		Debit	Credit
01/01/X4	Unrecognized Prior Service Cost	80,000	
	Projected Benefit Obligation		80,000

Ledgers

Unrecognized Prior Service Cost

01/01/X4 80,000 (10.3.1)	
balance 80,000	

Projected Benefit Obligation

	01/01/X4 112,000 (10.1.5)
	01/01/X4 80,000 (10.3.1)
	new beginning balance 192,000

2. **Journal Entry for Interest Cost**

(10.1.12) Interest Cost = Projected Benefit Obligation Beginning Balance (10.1.5) × Settlement Rate (10.1.11)

(10.1.12) Interest Cost = 192,000 (10.1.5) × 0.10 (10.1.11)
= 19,200

Journal Entry

		Debit	Credit
12/31/XX	Pension Expense	(10.1.12)	
	Projected Benefit Obligation		(10.1.12)

		Debit	Credit
12/31/X4	Pension Expense	19,200	
	Projected Benefit Obligation		19,200

Ledgers

Pension Expense

12/31/X4 11,200 (10.1.12)	
balance 19,200	

Projected Benefit Obligation

	01/01/X4 112,000
	01/01/X4 80,000 (10.3.1)
	12/31/X4 19,200 (10.1.12)
	balance 211,200

3. **Journal Entry for Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.1.13)	
	Projected Benefit Obligation		(10.1.13)

		Debit	Credit
12/31/X4	Pension Expense	9,500	
	Projected Benefit Obligation		9,500

Ledgers

Pension Expense

12/31/X4 19,200 (10.1.12)	
12/31/X4 9,500 (10.1.13)	
balance 28,700	

Projected Benefit Obligation

	01/01/X4 112,000
	01/01/X4 80,000 (10.3.1
	12/31/X4 19,200 (10.1.12)
	12/31/X4 9,500 (10.1.13)
	balance 220,700

4. **Journal Entry for Plan Assets Increase**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.14)	
	Pension Expense		(10.1.14)

		Debit	Credit
12/31/X4	Plan Assets	11,100	
	Pension Expense		11,100

Ledgers

Pension Expense

12/31/X4 19,200 (10.1.12)	
12/31/X4 9,500 (10.1.13)	
	12/31/X4 11,100 (10.1.14)
balance 17,600	

Plan Assets

01/01/X4 111,000 (10.1.9)	
12/31/X4 11,100 (10.1.14)	
balance 122,100	

5. **Journal Entry for Contributions**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X4	Plan Assets	20,000	
	Cash		20,000

Ledger

Plan Assets

01/01/X4 111,000 (10.1.9)	
12/31/X4 11,100 (10.1.14)	
12/31/X4 20,000 (10.1.15)	
balance 142,100	

6. **Journal Entry for Benefits Paid**

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.16)	
	Plan Assets		(10.1.16)

		Debit	Credit
12/31/X4	Projected Benefit Obligation	8,000	
	Plan Assets		8,000

Ledgers

Plan Assets

01/01/X4 111,000 (10.1.9)	
12/31/X4 11,100 (10.1.14)	
12/31/X4 20,000 (10.1.15)	
	12/31/X4 8,000 (10.1.16)
balance 134,100	

Projected Benefit Obligation

	01/01/X4 112,000
	01/01/X4 80,000 (10.3.1
	12/31/X4 19,200 (10.1.12)
	12/31/X4 9,500 (10.1.13)
12/31/X4 8,000 (10.1.16)	
	balance 212,700

7. **Projected Benefit Obligation Corridor**

(10.6.6) Projected Benefit Obligation Corridor = Projected Benefit Obligation Beginning Balance (10.1.5) × 0.10

(10.6.6) Projected Benefit Obligation Corridor = 212,700 × 0.10
= 21,270

8. **Plan Assets Corridor**

(10.6.7) Plan Assets Corridor = Plan Assets Beginning Balance (10.1.9) × 0.10

(10.6.7) Plan Assets Corridor = 134,100 × 0.10
= 13,410

9. **Corridor Amount**

If Projected Benefit Obligation Corridor (10.6.6) > Plan Assets Corridor (10.6.7) then:
(10.6.8) Corridor Amount = Projected Benefit Obligation Corridor (10.6.6)

If Plan Assets Corridor (10.6.7) > Projected Benefit Obligation Corridor (10.6.6) then:
(10.6.8) Corridor Amount = Plan Assets Corridor (10.6.7)

(10.6.8) Corridor Amount = 21,270

10. **Possible Corridor Amortization**

(10.6.9) Possible Corridor Amortization = Unrecognized Net Gain/Loss Beginning Balance (10.6.1) – Corridor Amount (10.6.8)

(10.6.9) Possible Corridor Amortization = 0 – 21,270
= -21,270

Since Possible Corridor Amortization < 0 then Smoothing Gains and Losses (10.6) is complete.

11. **Journal Entry, Amortization for Unrecognized Prior Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.5.7)	
	Unrecognized Prior Service Cost		(10.5.7)

		Debit	Credit
12/31/X4	Pension Expense	27,200	
	Unrecognized Prior Service Cost		27,200

Ledgers

Pension Expense

12/31/X4 19,200 (10.1.12)	
12/31/X4 9,500 (10.1.13)	
	12/31/X4 11,100 (10.1.14)
12/31/X4 27,200 (10.5.7)	
balance 44,800	

Pension Expense = $44,800.

Unrecognized Prior Service Cost

01/01/X4 80,000 (10.3.1)	
	12/31/X4 27,200 (10.5.7)
balance 52,800	

12. **Closing Journal Entries**

Closing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.5) Ending Balance

		Debit	Credit
12/31/X4	Projected Benefit Obligation	212,700	
	Prepaid/Accrued Pension Cost		212,700

Closing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.9) Ending Balance	
	Plan Assets		(10.1.9) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Pension Cost	134,100	
	Plan Assets		134,100

Closing Journal Entry For Unrecognized Prior Service Cost

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.3.1) Ending Balance	
	Unrecognized Prior Service Cost		(10.3.1) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Pension Cost	52,800	
	Unrecognized Prior Service Cost		52,800

Ledger

Prepaid/Accrued Pension Cost

	12/31/X4 212,700 (10.1.5)
12/31/X4 134,100 (10.1.9)	
12/31/X4 52,800 (10.3.1)	
	balance 25,800

Prepaid/Accrued Pension Cost = $25,800 Accrued Pension Cost

Minimum Liability

13. **Unfunded Accumulated Benefit Obligation**

(10.9.3) Unfunded Accumulated Benefit Obligation = Accumulated Benefit Obligation (10.1.6) – Plan Assets Ending Balance (before Prepaid/Accrued Pension Cost close) (10.1.9)

(10.9.3) Unfunded Accumulated Benefit Obligation = 164,000 – 134,100
= 29,900

14. **Additional Pension Liability Ending Balance**

(10.9.4) Additional Pension Liability Ending Balance = Unfunded Accumulated Benefit Obligation (10.9.3) – Prepaid/Accrued Pension Cost Ending Balance (10.2)

(10.9.4) Additional Pension Liability Ending Balance = 29,900 – 25,800
= 4,100

15. **Additional Pension Liability Adjustment**

(10.9.5) Additional Pension Liability Adjustment = Additional Pension Liability Ending Balance (10.9.4) – Additional Pension Liability Beginning Balance (10.9.1)

(10.9.5) Additional Pension Liability Adjustment = 4,100 – 0
= 4,100

16. **Journal Entry, If Additional Pension Liability Adjustment > 0**

		Debit	Credit
12/31/XX	Deferred Pension Cost (10.9.2)	(10.9.5)	
	Additional Pension Liability (10.9.1)		(10.9.5)

		Debit	Credit
12/31/X4	Deferred Pension Cost (10.9.2)	4,100	
	Additional Pension Liability (10.9.1)		4,100

Ledgers

Deferred Pension Cost

12/31/X4 4,100 (10.9.5)	
balance 4,100	

Additional Pension Liability

	12/31/X4 4,100 (10.9.5)
	balance 4,100

17. **Reversing Journal Entries**

Reversing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.5) Ending Balance	
	Projected Benefit Obligation		(10.1.5) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Pension Cost	212,700	
	Projected Benefit Obligation		212,700

Reversing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Plan Assets	(10.1.9) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.9) Ending Balance

		Debit	Credit
12/31/X4	Plan Assets	134,100	
	Prepaid/Accrued Pension Cost		134,100

Reversing Journal Entry For Unrecognized Prior Service Cost

		Debit	Credit
12/31/XX	Unrecognized Prior Service Cost	(10.3.1) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.3.1) Ending Balance

		Debit	Credit
12/31/X4	Unrecognized Prior Service Cost	52,800	
	Prepaid/Accrued Pension Cost		52,800

Ledger

Prepaid/Accrued Pension Cost

	12/31/X4 212,700 (10.1.5)
12/31/X4 134,100 (10.1.9)	
12/31/X4 52,800 (10.3.1)	
12/31/X4 212,700 (10.1.5)	
	12/31/X4 134,100 (10.1.9)
	12/31/X4 52,800 (10.3.1)
	balance 0

10.5 Defined Benefit Plan: 20X5

Example 77, 20X5:
Plan Assets, 01/01/X5 = $134,100.
Projected Benefit Obligation, 01/01/X5 = $212,700.

Accumulated Benefit Obligation, 12/31/X5 = $240,600.
Additional Pension Liability, 01/01/X5 = $4,100.
Deferred Pension Cost, 01/01/X5 = $4,100.
Annual Service Cost = $13,000.
Settlement Rate = 10%.
Assets Expected Rate = 10%.
Actual return on plan assets = $12,000.
Contributions = $24,000.
Benefits paid to retirees during the year = $10,500.
Unrecognized Prior Service Cost, 01/01/X5 = $52,800.
Amortization of Prior Service Cost = $20,800.
Liability Loss = $28,530.
What is the Pension Expense?
What is the Prepaid/Accrued Pension Cost Balance?
What is the Additional Pension Liability Ending Balance?
What is the Deferred Pension Cost Ending Balance?
What is the Excess of Additional Liability Over Unrecognized Pension Service Cost?

Solution 77:

Initial Ledger Balances

Plan Assets

01/01/X5 134,100 (10.1.9)	
balance 134,100	

Projected Benefit Obligation

	01/01/X5 212,700 (10.1.5)
	balance 212,700

Unrecognized Prior Service Cost

01/01/X5 52,800 (10.3.1)	
balance 52,800	

Additional Pension Liability

	01/01/X5 4,100 (10.9.1)
	balance 4,100

Deferred Pension Cost

01/01/X5 4,100 (10.9.2)	
balance 4,100	

1. **Journal Entry for Interest Cost**

(10.1.12) Interest Cost = Projected Benefit Obligation (10.1.5) × Settlement Rate (10.1.11)

(10.1.12) Interest Cost = 212,700 (10.1.5) × 0.10 (10.1.11)
= 21,270

Journal Entry

		Debit	Credit
12/31/XX	Pension Expense	(10.1.12)	
	Projected Benefit Obligation		(10.1.12)

		Debit	Credit
12/31/X5	Pension Expense	21,270	
	Projected Benefit Obligation		21,270

Ledgers

Pension Expense

12/31/X5 21,270 (10.1.12)	
balance 21,270	

Projected Benefit Obligation

	01/01/X5 212,700
	12/31/X5 21,270 (10.1.12)
	balance 233,970

2. **Journal Entry for Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.1.13)	
	Projected Benefit Obligation		(10.1.13)

		Debit	Credit
12/31/X5	Pension Expense	13,000	
	Projected Benefit Obligation		13,000

Ledgers

Pension Expense

12/31/X5 21,270 (10.1.12)	
12/31/X5 13,000 (10.1.13)	
balance 34,270	

Projected Benefit Obligation

	01/01/X5 212,700
	12/31/X5 21,270 (10.1.12)
	12/31/X5 13,000 (10.1.13)
	balance 246,970

3. **Journal Entry for Plan Assets Increase**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.14)	
	Pension Expense		(10.1.14)

		Debit	Credit
12/31/X5	Plan Assets	12,000	
	Pension Expense		12,000

Ledgers

Pension Expense

12/31/X5 21,270 (10.1.12)	
12/31/X5 13,000 (10.1.13)	
	12/31/X5 12,000 (10.1.14)
balance 22,270	

Plan Assets

01/01/X5 134,100 (10.1.9)	
12/31/X5 12,000 (10.1.14)	
balance 146,100	

4. (10.6.3) Plan Assets Expected Return = Plan Assets (10.1.9) Beginning Balance × Plan Assets Expected Rate of Return (10.6.2)

(10.6.3) Plan Assets Expected Return = 134,100 × 0.10
= 13,410

5. **Journal Entry for Unexpected Net Gain/Loss**

(10.6.4) Unexpected Net Gain/(Loss) = Plan Assets Return (10.1.14) – Plan Assets Expected Return (10.6.3)

(10.6.4) Unexpected Net Gain/(Loss) = 12,000 – 13,410
= (1,410)

Journal Entry, If Unexpected Net (Loss)

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss	(10.6.4)	
	Pension Expense		(10.6.4)

		Debit	Credit
12/31/X5	Unrecognized Net Gain/Loss	1,410	
	Pension Expense		1,410

Ledgers

Pension Expense

12/31/X5 21,270 (10.1.12)	
12/31/X5 13,000 (10.1.13)	
	12/31/X5 12,000 (10.1.14)
	12/31/X5 1,410 (10.6.4)
balance 20,860	

Unrecognized Net Gain/Loss

12/31/X5 1,410 (10.6.4)	
balance 1,410	

6. **Journal Entry, If Liability (Loss)**

		Debit	Credit
12/31/XX	Unrecognized Net Gain/Loss	(10.6.5)	
	Projected Benefit Obligation		(10.6.5)

		Debit	Credit
12/31/X5	Unrecognized Net Gain/Loss	28,530	
	Projected Benefit Obligation		28,530

Ledgers

Projected Benefit Obligation

	01/01/X5 212,700
	12/31/X5 21,270 (10.1.12)
	12/31/X5 13,000 (10.1.13)
	12/31/X5 28,530 (10.6.5)
	balance 275,500

Unrecognized Net Gain/Loss

12/31/X5 1,410 (10.6.4)	
12/31/X5 28,530 (10.6.5)	
balance 29,940	

7. **Journal Entry for Contributions**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X5	Plan Assets	24,000	
	Cash		24,000

Ledger

Plan Assets

01/01/X5 134,100 (10.1.9)	
12/31/X5 12,000 (10.1.14)	
12/31/X5 24,000 (10.1.15)	
balance 170,100	

8. **Journal Entry for Benefits Paid**

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.16)	
	Plan Assets		(10.1.16)

		Debit	Credit
12/31/X5	Projected Benefit Obligation	10,500	
	Plan Assets		10,500

Ledgers

Plan Assets

01/01/X5 134,100 (10.1.9)	
12/31/X5 12,000 (10.1.14)	
12/31/X5 24,000 (10.1.15)	
	12/31/X5 10,500 (10.1.16)
balance 159,600	

Projected Benefit Obligation

	01/01/X5 212,700
	12/31/X5 21,270 (10.1.12)
	12/31/X5 13,000 (10.1.13)
	12/31/X5 28,530 (10.6.5)
12/31/X5 10,500 (10.1.16)	
	balance 265,000

9. **Journal Entry, Amortization for Unrecognized Prior Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.5.7)	
	Unrecognized Prior Service Cost		(10.5.7)

		Debit	Credit
12/31/X5	Pension Expense	20,800	
	Unrecognized Prior Service Cost		20,800

Ledgers

Pension Expense

12/31/X5 21,270 (10.1.12)	
12/31/X5 13,000 (10.1.13)	
	12/31/X5 12,000 (10.1.14)
	12/31/X5 1,410 (10.6.4)
12/31/X5 20,800 (10.5.7)	
balance 41,660	

Pension Expense = $41,660.

Unrecognized Prior Service Cost

01/01/X5 52,800 (10.3.1)	
	12/31/X5 20,800 (10.5.7)
balance 32,000	

10. **Projected Benefit Obligation Corridor**

(10.6.6) Projected Benefit Obligation Corridor = Projected Benefit Obligation Beginning Balance (10.1.5) × 0.10

(10.6.6) Projected Benefit Obligation Corridor = 212,700 × 0.10
= 21,270

11. **Plan Assets Corridor**

(10.6.7) Plan Assets Corridor = Plan Assets Beginning Balance (10.1.9) × 0.10

(10.6.7) Plan Assets Corridor = 134,100 × 0.10
= 13,410

12. **Corridor Amount**
If Projected Benefit Obligation Corridor (10.6.6) > Plan Assets Corridor (10.6.7) then:
(10.6.8) Corridor Amount = Projected Benefit Obligation Corridor (10.6.6)

If Plan Assets Corridor (10.6.7) > Projected Benefit Obligation Corridor (10.6.6) then:
(10.6.8) Corridor Amount = Plan Assets Corridor (10.6.7)

(10.6.8) Corridor Amount = 21,270

13. **Possible Corridor Amortization**
(10.6.9) Possible Corridor Amortization = Unrecognized Net Gain/Loss (10.6.1) Beginning Balance – Corridor Amount (10.6.8)

(10.6.9) Possible Corridor Amortization = 0 – 21,270
= -21,270

Since Possible Corridor Amortization < 0 then Smoothing Gains and Losses (10.6) is complete.

14. **Closing Journal Entries**

Closing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.5) Ending Balance

		Debit	Credit
12/31/X5	Projected Benefit Obligation	265,000	
	Prepaid/Accrued Pension Cost		265,000

Closing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.9) Ending Balance	
	Plan Assets		(10.1.9) Ending Balance

		Debit	Credit
12/31/X5	Prepaid/Accrued Pension Cost	159,600	
	Plan Assets		159,600

Closing Journal Entry For Unrecognized Prior Service Cost

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.3.1) Ending Balance	
	Unrecognized Prior Service Cost		(10.3.1) Ending Balance

		Debit	Credit
12/31/X5	Prepaid/Accrued Pension Cost	32,000	
	Unrecognized Prior Service Cost		32,000

Closing Journal Entry For Unrecognized Net Gain/Loss

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.6.1) Ending Balance	
	Unrecognized Net Gain/Loss		(10.6.1) Ending Balance

		Debit	Credit
12/31/X5	Prepaid/Accrued Pension Cost	29,940	
	Unrecognized Net Gain/Loss		29,940

Ledger

Prepaid/Accrued Pension Cost

	12/31/X5 265,000 (10.1.5)
12/31/X5 159,600 (10.1.9)	
12/31/X5 32,000 (10.3.1)	
12/31/X5 29,940 (10.6.1)	
	balance 43,460

Prepaid/Accrued Pension Cost = $43,460 Accrued Pension Cost.

Minimum Liability

15. **Unfunded Accumulated Benefit Obligation**

(10.9.3) Unfunded Accumulated Benefit Obligation = Accumulated Benefit Obligation (10.1.6) – Plan Assets Ending Balance (before Prepaid/Accrued Pension Cost close) (10.1.9)

(10.9.3) Unfunded Accumulated Benefit Obligation = 240,600 – 159,600
= 81,000

16. **Additional Pension Liability Ending Balance**

(10.9.4) Additional Pension Liability Ending Balance = Unfunded Accumulated Benefit Obligation (10.9.3) – Prepaid/Accrued Pension Cost Ending Balance (10.2)

(10.9.4) Additional Pension Liability Ending Balance = 81,000 – 43,460
= 37,540

17. **Additional Pension Liability Adjustment**

(10.9.5) Additional Pension Liability Adjustment = Additional Pension Liability Ending Balance (10.9.4) – Additional Pension Liability Beginning Balance (10.9.1)

(10.9.5) Additional Pension Liability Adjustment = 37,540 – 4,100
= 33,440

18. **Journal Entry, If Additional Pension Liability Adjustment > 0**

		Debit	Credit
12/31/XX	Deferred Pension Cost (10.9.2)	(10.9.5)	
	Additional Pension Liability (10.9.1)		(10.9.5)

		Debit	Credit
12/31/X5	Deferred Pension Cost (10.9.2)	33,440	
	Additional Pension Liability (10.9.1)		33,440

Ledgers

Deferred Pension Cost

01/01/X5 4,100 (10.9.1) 12/31/X5 33,440 (10.9.5) balance 37,540	

Additional Pension Liability

	01/01/X5 4,100 (10.9.1) 12/31/X5 33,440 (10.9.5) balance 37,540

Additional Pension Liability Ending Balance = $37,540.

19. **Excess of Additional Liability Over Unrecognized Pension Service Cost Balance**

(10.9.7) Excess of Additional Liability Over Unrecognized Pension Service Cost Balance = Additional Pension Liability Ending Balance (10.9.1) – Unrecognized Prior Service Cost Ending Balance (before Prepaid/Accrued Pension Cost close) (10.3.1)

(10.9.7) Excess of Additional Liability Over Unrecognized Pension Service Cost Balance = 37,540 – 32,000 = 5,540

20. **Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment**

(10.9.8) Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment = Excess of Additional Liability Over Unrecognized Pension Service Cost Balance (10.9.7) – Excess of Additional Liability Over Unrecognized Pension Service Cost Beginning Balance (10.9.6)

(10.9.8) Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment = 5,540 – 0 = 5,540

21. **If Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment > 0**

		Debit	Credit
12/31/XX	Excess of Additional Liability Over Unrecognized Pension Service Cost	(10.9.8)	
	Deferred Pension Cost		(10.9.8)

		Debit	Credit
12/31/X5	Excess of Additional Liability Over Unrecognized Pension Service Cost	5,540	
	Deferred Pension Cost		5,540

Ledgers

Deferred Pension Cost

01/01/X5 4,100 (10.9.2)	
12/31/X5 33,440 (10.9.5)	
	12/31/X5 5,540 (10.9.6)
balance 32,000	

Deferred Pension Cost Ending Balance = $32,000.

Excess of Additional Pension Liability Over Unrecognized Prior Service Cost

12/31/X5 5,540 (10.9.6)	
balance 5,540	

Excess of Additional Pension Liability Over Unrecognized Prior Service Cost = $5,540.

10.6 Defined Benefit Plan: 20X6

Example 78, 20X6:
Plan Assets, 01/01/X6 = $159,600.
Projected Benefit Obligation, 01/01/X6 = $265,000.
Accumulated Benefit Obligation, 12/31/X6 = $263,000.
Unrecognized Net Gain/Loss, 01/01/X6 = $29,940.
Additional Pension Liability, 01/01/X6 = $37,540.
Annual Service Cost = $16,000.
Settlement Rate = 10%.
Assets Expected Rate = 10%.
Actual return on plan assets = $22,000.
Contributions = $27,000.
Benefits paid to retirees during the year = $18,000.
Unrecognized Prior Service Cost, 01/01/X6 = $32,000.
Unrecognized Net Gain/Loss, 01/01/X6 = $29,940.
Excess of Additional Pension Liability Over Prior Service Cost, 01/01/X6 = $5,540.
Deferred Pension Cost, 01/01/X6 = $32,000.
Amortization of Prior Service Cost = $17,600.
Average service life of all coverted empolyees is 20 years.
What is the Pension Expense?
What is the Prepaid/Accrued Pension Cost Balance?
What is the Additional Pension Liability Ending Balance?
What is the Deferred Pension Cost Ending Balance?
What is the Excess of Additional Liability Over Unrecognized Pension Service Cost Balance?

Solution 78:

Initial Ledger Balances

Plan Assets

01/01/X6 159,600 (10.1.9)	
balance 159,600	

Projected Benefit Obligation

	01/01/X6 265,000 (10.1.5)
	balance 265,000

Unrecognized Prior Service Cost

01/01/X6 32,000 (10.3.1)	
balance 32,000	

Unrecognized Net Gain/Loss

01/01/X6 29,940	
balance 29,940	

Additional Pension Liability

	01/01/X6 37,540
	balance 37,540

Deferred Pension Cost

01/01/X6 32,000	
balance 37,540	

Excess of Additional Pension Liability Over Unrecognized Prior Service Cost

01/01/X6 5,540 (10.9.6)	
balance 5,540	

1. **Journal Entry for Interest Cost**

   (10.1.12) Interest Cost = Projected Benefit Obligation (10.1.5) × Settlement Rate (10.1.11)

   (10.1.12) Interest Cost = 265,000 × 0.10
   = 26,500

   Journal Entry

		Debit	Credit
12/31/XX	Pension Expense	(10.1.12)	
	Projected Benefit Obligation		(10.1.12)

		Debit	Credit
12/31/X6	Pension Expense	26,500	
	Projected Benefit Obligation		26,500

   Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
balance 26,500	

Projected Benefit Obligation

	01/01/X6 265,000 (10.1.5)
	12/31/X6 26,500 (10.1.12)
	balance 291,500

2. **Journal Entry for Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.1.13)	
	Projected Benefit Obligation		(10.1.13)

		Debit	Credit
12/31/X6	Pension Expense	16,000	
	Projected Benefit Obligation		16,000

   Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
12/31/X6 16,000 (10.1.13)	
balance 42,500	

Projected Benefit Obligation

	01/01/X6 265,000 (10.1.5)
	12/31/X6 26,500 (10.1.12)
	12/31/X6 16,000 (10.1.13)
	balance 307,500

3. **Journal Entry for Plan Assets Increase**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.14)	
	Pension Expense		(10.1.14)

		Debit	Credit
12/31/X6	Plan Assets	22,000	
	Pension Expense		22,000

Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
12/31/X6 16,000 (10.1.13)	
	12/31/X6 22,000 (10.1.14)
balance 20,500	

Plan Assets

01/01/X6 159,600 (10.1.9)	
12/31/X6 22,000 (10.1.14)	
balance 181,600	

4. (10.6.3) Plan Assets Expected Return = Plan Assets (10.1.9) Beginning Balance × Plan Assets Expected Rate of Return (10.6.2)

(10.6.3) Plan Assets Expected Return = 159,600 × 0.10
= 15,960

5. **Journal Entry for Unexpected Net Gain/Loss**

(10.6.4) Unexpected Net Gain/(Loss) = Plan Assets Return (10.1.14) – Plan Assets Expected Return (10.6.3)

(10.6.4) Unexpected Net Gain/(Loss) = 22,000 – 15,960
= 6,040

Journal Entry, If Unexpected Net Gain

		Debit	Credit
12/31/XX	Pension Expense	(10.6.4)	
	Unrecognized Net Gain/Loss		(10.6.4)

		Debit	Credit
12/31/X6	Pension Expense	6,040	
	Unrecognized Net Gain/Loss		6,040

Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
12/31/X6 16,000 (10.1.13)	
	12/31/X6 22,000 (10.1.14)
12/31/X6 6,040 (10.6.4)	
balance 26,540	

Unrecognized Net Gain/Loss

01/01/X6 29,940	
	12/31/X6 6,040 (10.6.4)
balance 23,900	

6. **Journal Entry for Contributions**

		Debit	Credit
12/31/XX	Plan Assets	(10.1.15)	
	Cash		(10.1.15)

		Debit	Credit
12/31/X6	Plan Assets	27,000	
	Cash		27,000

Ledger

Plan Assets

01/01/X6 159,600 (10.1.9)	
12/31/X6 22,000 (10.1.14)	
12/31/X6 27,000 (10.1.15)	
balance 208,600	

7. **Journal Entry for Benefits Paid**

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.16)	
	Plan Assets		(10.1.16)

		Debit	Credit
12/31/X6	Projected Benefit Obligation	18,000	
	Plan Assets		18,000

Ledgers

Plan Assets

01/01/X6 159,600 (10.1.9)	
12/31/X6 22,000 (10.1.14)	
12/31/X6 27,000 (10.1.15)	
	12/31/X6 18,000 (10.1.16)
balance 190,600	

Projected Benefit Obligation

	01/01/X6 265,000 (10.1.5)
	12/31/X6 26,500 (10.1.12)
	12/31/X6 16,000 (10.1.13)
12/31/X6 18,000 (10.1.16)	
	balance 289,500

8. **Journal Entry, Amortization for Unrecognized Prior Service Cost**

		Debit	Credit
12/31/XX	Pension Expense	(10.5.7)	
	Unrecognized Prior Service Cost		(10.5.7)

		Debit	Credit
12/31/X6	Pension Expense	17,600	
	Unrecognized Prior Service Cost		17,600

Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
12/31/X6 16,000 (10.1.13)	
	12/31/X6 22,000 (10.1.14)
12/31/X6 6,040 (10.6.4)	
12/31/X6 17,600 (10.5.7)	
balance 44,140	

Unrecognized Prior Service Cost

01/01/X6 32,000 (10.3.1)	
	01/01/X6 17,600 (10.5.7)
balance 14,400	

9. **Projected Benefit Obligation Corridor**

(10.6.6) Projected Benefit Obligation Corridor = Projected Benefit Obligation Beginning Balance (10.1.5) × 0.10

(10.6.6) Projected Benefit Obligation Corridor = 265,000 × 0.10
= 26,500

10. **Plan Assets Corridor**

(10.6.7) Plan Assets Corridor = Plan Assets Beginning Balance (10.1.9) × 0.10

(10.6.7) Plan Assets Corridor = 159,600 × 0.10
= 15,960

11. **Corridor Amount**

If Projected Benefit Obligation Corridor (10.6.6) > Plan Assets Corridor (10.6.7) then:
(10.6.8) Corridor Amount = Projected Benefit Obligation Corridor (10.6.6)
If Plan Assets Corridor (10.6.7) > Projected Benefit Obligation Corridor (10.6.6) then:
(10.6.8) Corridor Amount = Plan Assets Corridor (10.6.7)

(10.6.8) Corridor Amount = 26,500

12. **Possible Corridor Amortization**

(10.6.9) Possible Corridor Amortization = Unrecognized Net Gain/Loss Beginning Balance (10.6.1) – Corridor Amount (10.6.8)

(10.6.9) Possible Corridor Amortization = 29,940 – 26,500
= 3,440

Since Possible Corridor Amortization > 0 then Smooth Gain or Loss.

13. **Corridor Amortization**

(10.6.13) Corridor Amortization = Possible Corridor Amortization (10.6.9) ÷ Average Remaining Service-Years Participating Employees (10.6.12)

(10.6.13) Corridor Amortization = 3,440 ÷ 20
= 172

Journal Entry, If Possible Corridor Amortization (10.6.9) > 0 then:

Journal Entry, If Corridor Amount (10.6.8) = Projected Benefit Obligation Corridor (10.6.6)

		Debit	Credit
12/31/XX	Pension Expense	(10.6.13)	
	Unrecognized Net Gain/Loss		(10.6.13)

		Debit	Credit
12/31/X6	Pension Expense	172	
	Unrecognized Net Gain/Loss		172

Ledgers

Pension Expense

12/31/X6 26,500 (10.1.12)	
12/31/X6 16,000 (10.1.13)	
	12/31/X6 22,000 (10.1.14)
12/31/X6 6,040 (10.6.4)	
12/31/X6 17,600 (10.5.7)	
12/31/X6 172 (10.6.13)	
balance 44,312	

Unrecognized Net Gain/Loss

01/01/X6 29,940	
	12/31/X6 6,040 (10.6.4)
	12/31/X6 172 (10.6.13)
balance 23,728	

14. **Closing Journal Entries**

Closing Journal Entry For Projected Benefit Obligation

		Debit	Credit
12/31/XX	Projected Benefit Obligation	(10.1.5) Ending Balance	
	Prepaid/Accrued Pension Cost		(10.1.5) Ending Balance

		Debit	Credit
12/31/X6	Projected Benefit Obligation	289,500	
	Prepaid/Accrued Pension Cost		289,500

Closing Journal Entry For Plan Assets

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.1.9) Ending Balance	
	Plan Assets		(10.1.9) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost	190,600	
	Plan Assets		190,600

Closing Journal Entry For Unrecognized Prior Service Cost

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Cost	(10.3.1) Ending Balance	
	Unrecognized Prior Service Cost		(10.3.1) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost	14,400	
	Unrecognized Prior Service Cost		14,400

Closing Journal Entry For Unrecognized Net Gain/Loss
Journal Entry, If Debit Balance

		Debit	Credit
12/31/XX	Prepaid/Accrued Pension Costs (10.2)	(10.6.1) Ending Balance	
	Unrecognized Net Gain/Loss		(10.6.1) Ending Balance

		Debit	Credit
12/31/X6	Prepaid/Accrued Pension Cost	23,728	
	Unrecognized Net Gain/Loss		23,728

Ledger

Prepaid/Accrued Pension Cost

	12/31/X6 289,500 (10.1.5)
12/31/X6 190,600 (10.1.9)	
12/31/X6 14,400 (10.3.1)	
12/31/X6 23,728 (10.6.1)	
	balance 60,772

Prepaid/Accrued Pension Cost = $60,772 Accrued Pension Cost

Minimum Liability

15. **Unfunded Accumulated Benefit Obligation**

(10.9.3) Unfunded Accumulated Benefit Obligation = Accumulated Benefit Obligation (10.1.6) – Plan Assets Ending Balance (before Prepaid/Accrued Pension Cost close) (10.1.9)

(10.9.3) Unfunded Accumulated Benefit Obligation = 263,000 – 190,600
= 72,400

16. **Additional Pension Liability Ending Balance**

(10.9.4) Additional Pension Liability Ending Balance = Unfunded Accumulated Benefit Obligation (10.9.3) – Prepaid/Accrued Pension Cost Ending Balance (10.2)

(10.9.4) Additional Pension Liability Ending Balance = 72,400 – 60,772
= 11,628

17. **Additional Pension Liability Adjustment**

(10.9.5) Additional Pension Liability Adjustment = Additional Pension Liability Beginning Balance (10.9.1) – Additional Pension Liability Ending Balance (10.9.4)

(10.9.5) Additional Pension Liability Adjustment = 37,540 – 11,628
= 25,912

18. **Journal Entry, If Additional Pension Liability Adjustment > 0**

		Debit	Credit
12/31/XX	Deferred Pension Cost (10.9.2)	(10.9.5)	
	Additional Pension Liability (10.9.1)		(10.9.5)

		Debit	Credit
12/31/X6	Deferred Pension Cost (10.9.2)	25,912	
	Additional Pension Liability (10.9.1)		25,912

Ledgers

Deferred Pension Cost

01/01/X6 32,000	
	12/31/X6 25,912 (10.9.5)
balance 6,088	

Additional Pension Liability

	01/01/X6 37,540 (10.9.1)
12/31/X6 25,912 (10.9.5)	
	balance 11,628

Additional Pension Liability Ending Balance = $11,628.

19. **Excess of Additional Liability Over Unrecognized Pension Service Cost Balance**

(10.9.7) Excess of Additional Liability Over Unrecognized Pension Service Cost Balance = Additional Pension Liability Ending Balance (10.9.1) – Unrecognized Prior Service Cost Ending Balance (before Prepaid/Accrued Pension Cost close) (10.3.1)

(10.9.7) Excess of Additional Liability Over Unrecognized Pension Service Cost Balance = 11,628 – 14,400 = -2,772

If Excess of Additional Liability Over Unrecognized Pension Service Cost Balance < 0 then:
Excess of Additional Liability Over Unrecognized Pension Service Cost Balance = 0

20. **Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment**

(10.9.8) Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment = Excess of Additional Liability Over Unrecognized Pension Service Cost Balance (10.9.7) – Excess of Additional Liability Over Unrecognized Pension Service Cost Beginning Balance (10.9.6)

(10.9.8) Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment = 0 – 5,540 = -5,540

21. **If Excess of Additional Liability Over Unrecognized Pension Service Cost Adjustment < 0**

		Debit	Credit
12/31/XX	Deferred Pension Cost	(10.9.8)	
	Excess of Additional Liability Over Unrecognized Pension Service Cost		(10.9.8)

		Debit	Credit
12/31/X6	Deferred Pension Cost	5,540	
	Excess of Additional Liability Over Unrecognized Pension Service Cost		5,540

Ledgers

Deferred Pension Cost

01/01/X6 32,000	
	12/31/X6 25,912 (10.9.5)
12/31/X6 5,540 (10.9.8)	
balance 11,628	

Deferred Pension Cost Balance = $11,628.

Excess of Additional Pension Liability Over Unrecognized Prior Service Cost

01/01/X6 5,540 (10.9.6)	
	12/31/X6 5,540 (10.9.8)
balance 0	

Excess of Additional Pension Liability Over Unrecognized Prior Service Cost Balance = $0.

10.7 Other Post-Retirement Benefit Plan: Simple

Example 79, 20X3:
Postretirement Plan Assets, 01/01/X3 = $0.
Initial Unrecognized Transition Amount, 01/01/X3 = $400,000.
Annual Service Cost = $22,000.
Discount Rate = 8%.
Contributions = $38,000.
Benefits paid to retirees during the year = $28,000.
Average Remaining Service-Years Participating Employees = 25.
What is the Postretirement Expense?
What is the Prepaid/Accrued Pension Cost Balance?

Solution 79:

1. **Journal Entry for Initial Unrecognized Transition Amount**

		Debit	Credit
01/01/XX	Unrecognized Transition Amount	(10.11.5)	
	Accumulated Postretirement Benefit Obligation		(10.11.5)

		Debit	Credit
01/01/X3	Unrecognized Transition Amount	400,000	
	Accumulated Postretirement Benefit Obligation		400,000

Ledgers

Unrecognized Transition Amount

01/01/X3 400,000 (10.11.5)	
balance 400,000	

Accumulated Postretirement Benefit Obligation

	01/01/X3 400,000 (10.11.5)
	balance 400,000

2. **Journal Entry for Postretirement Service Cost (10.11.7)**

		Debit	Credit
12/31/XX	Postretirement Expense	(10.11.7)	
	Accumulated Pension Benefit Obligation		(10.11.7)

		Debit	Credit
12/31/X3	Postretirement Expense	22,000	
	Accumulated Pension Benefit Obligation		22,000

Ledgers

Postretirement Expense

12/31/X3 22,000 (10.11.7)	
balance 22,000	

Accumulated Postretirement Benefit Obligation

	01/01/X3 400,000 (10.11.5)
	12/31/X3 22,000 (10.11.7)
	balance 422,000

3. **Postretirement Interest Cost**

(10.11.9) Postretirement Interest Cost = Accumulated Postretirement Benefit Obligation (10.11.3) Beginning Balance × Discount Rate (10.11.8)

(10.11.9) Postretirement Interest Cost = 400,000 × 0.08
= 32,000

Journal Entry

		Debit	Credit
12/31/XX	Postretirement Expense	(10.11.9)	
	Accumulated Postretirement Benefit Obligation		(10.11.9)

		Debit	Credit
12/31/X3	Postretirement Expense	32,000	
	Accumulated Postretirement Benefit Obligation		32,000

Ledgers

Postretirement Expense

12/31/X3 22,000 (10.11.7)	
12/31/X3 32,000 (10.11.9)	
balance 54,000	

Accumulated Postretirement Benefit Obligation

	01/01/X3 400,000 (10.11.5)
	12/31/X3 22,000 (10.11.7)
	12/31/X3 32,000 (10.11.9)
	balance 454,000

4. **Journal Entry for Contributions**

		Debit	Credit
12/31/XX	Postretirement Plan Assets (10.11.6)	(10.11.11)	
	Cash		(10.11.11)

		Debit	Credit
12/31/X3	Postretirement Plan Assets (10.11.6)	38,000	
	Cash		38,000

Ledger

Postretirement Plan Assets

12/31/X3 38,000 (10.11.11)	
balance 38,000	

5. **Postretirement Unrecognized Transition Amortization (10.11.12)**

$$\text{Postretirement Unrecognized Transition Amortization} = \frac{\text{Unrecognized Transition Amount (10.11.5) Opening Balance}}{\text{Average Remaining Service-Years Participating Employees (10.6.12)}}$$

$$\text{Postretirement Unrecognized Transition Amortization} = \frac{400{,}000}{25} = 16{,}000$$

Journal Entry

		Debit	Credit
12/31/XX	Postretirement Expense	(10.11.12)	
	Unrecognized Transition Amount		(10.11.12)

		Debit	Credit
12/31/X3	Postretirement Expense	16,000	
	Unrecognized Transition Amount		16,000

Ledgers

Postretirement Expense

12/31/X3 22,000 (10.11.7)	
12/31/X3 32,000 (10.11.9)	
12/31/X3 16,000 (10.11.12)	
balance 70,000	

Postretirement Expense = $70,000.

Unrecognized Transition Amount

01/01/X3 400,000 (10.11.5)	
	12/31/X3 16,000 (10.11.12)
balance 384,000	

6. **Journal Entry for Benefits Paid**

		Debit	Credit
12/31/XX	Accumulated Postretirement Benefit Obligation	(10.11.13)	
	Postretirement Plan Assets		(10.11.13)

		Debit	Credit
12/31/X3	Accumulated Postretirement Benefit Obligation	28,000	
	Postretirement Plan Assets		28,000

Ledgers

Accumulated Postretirement Benefit Obligation

	01/01/X3 400,000 (10.11.5)
	12/31/X3 22,000 (10.11.7)
	12/31/X3 32,000 (10.11.9)
12/31/X3 28,000 (10.11.13)	
	balance 426,000

Postretirement Plan Assets

12/31/X3 38,000 (10.11.11)	
	12/31/X3 28,000 (10.11.11)
balance 10,000	

7. **Accumulated Postretirement and Retirement Plan Assets Closing Entries**

Journal Entry

		Debit	Credit
12/31/XX	Accumulated Postretirement Benefit Obligation	(10.11.3) Ending Balance	
	Prepaid/Accrued Postretirement Cost (10.11.4)		(10.11.3) Ending Balance

		Debit	Credit
12/31/X3	Accumulated Postretirement Benefit Obligation	426,000	
	Prepaid/Accrued Postretirement Cost (10.11.4)		426,000

Journal Entry

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.6) Ending Balance	
	Postretirement Plan Assets		(10.11.6) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Postretirement Cost (10.11.4)	10,000	
	Postretirement Plan Assets		10,000

8. **Unrecognized Transition Amount Closing Entries**

Journal Entry

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.5) Ending Balance	
	Unrecognized Transition Amount		(10.11.5) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Postretirement Cost (10.11.4)	384,000	
	Unrecognized Transition Amount		384,000

Ledger

Prepaid/Accrued Postretirement Cost

	12/31/X3 426,000 (10.11.3)
12/31/X3 10,000 (10.11.6)	
12/31/X3 384,000 (10.11.5)	
	balance 32,000

Prepaid/Accrued Postretirement Cost = $32,000 Accrued Postretirement Cost.

9. **Financial Statement Reversing Entries**

Journal Entry

		Debit	Credit
12/31/XX	Accumulated Postretirement Benefit Obligation	(10.11.3) Ending Balance	
	Prepaid/Accrued Postretirement Cost (10.11.4)		(10.11.3) Ending Balance

		Debit	Credit
12/31/X3	Accumulated Postretirement Benefit Obligation	426,000	
	Prepaid/Accrued Postretirement Cost (10.11.4)		426,000

Journal Entry

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.6) Ending Balance	
	Postretirement Plan Assets		(10.11.6) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Postretirement Cost (10.11.4)	10,000	
	Postretirement Plan Assets		10,000

Journal Entry

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.5) Ending Balance	
	Unrecognized Transition Amount		(10.11.5) Ending Balance

		Debit	Credit
12/31/X3	Prepaid/Accrued Postretirement Cost (10.11.4)	384,000	
	Unrecognized Transition Amount		384,000

Ledger

Prepaid/Accrued Postretirement Cost

	12/31/X3 426,000 (10.11.3)
12/31/X3 10,000 (10.11.6)	
12/31/X3 384,000 (10.11.5)	
12/31/X3 426,000 (10.11.3)	
	12/31/X3 10,000 (10.11.6)
	12/31/X3 384,000 (10.11.5)
	balance 0

10.8 Other Post-Retirement Benefit Plan: Complex

Example 80, 20X4:
Postretirement Plan Assets, 01/01/X4 = $10,000.
Accumulated Postretirement Benefit Obligation, 01/01/X4 = $426,000.
Unrecognized Transition Amount Opening Balance = $400,000.
Unrecognized Transition Amount, 01/01/X4 = $384,000.
Actuarial assumptions decrease Accumulated Postretirement Benefit Obligation = $60,000.
Annual Service Cost = $26,000.
Discount Rate = 8%.

Expected Rate of Postretirement Return = 8%.
Actual Return on Postretirement Plan Assets = $600.
Contributions = $50,000.
Benefits paid to retirees during the year = $35,000.
Average Remaining Service-Years Participating Employees = 25.
What is the Postretirement Expense?
What is the Prepaid/Accrued Postretirement Cost Balance?

Solution 80:

Initial Ledger Balances

Postretirement Plan Assets

01/01/X4 10,000 (10.11.6)	
balance 10,000	

Accumulated Postretirement Benefit Obligation

	01/01/X4 426,000 (10.11.6)
	balance 426,000

Unrecognized Transition Amount

01/01/X4 384,000 (10.11.5)	
balance 384,000	

1. **Journal Entry for Postretirement Service Cost (10.11.7)**

		Debit	Credit
12/31/XX	Postretirement Expense	(10.11.7)	
	Accumulated Pension Benefit Obligation		(10.11.7)

		Debit	Credit
12/31/X4	Postretirement Expense	26,000	
	Accumulated Pension Benefit Obligation		26,000

Ledgers

Postretirement Expense

12/31/X4 26,000 (10.11.7)	
balance 26,000	

Accumulated Postretirement Benefit Obligation

	01/01/X4 426,000 (10.11.6)
	12/31/X4 26,000 (10.11.7)
	balance 452,000

2. **Journal Entry for Postretirement Interest Cost**
   (10.11.9) Postretirement Interest Cost = Accumulated Postretirement Benefit Obligation (10.11.3) Beginning Balance × Discount Rate (10.11.8)
   (10.11.9) Postretirement Interest Cost = 426,000 × 0.08
   = 34,080

Journal Entry

		Debit	Credit
12/31/XX	Postretirement Expense (10.11.1)	(10.11.9)	
	Accumulated Postretirement Benefit Obligation		(10.11.9)

		Debit	Credit
12/31/X4	Postretirement Expense (10.11.1)	34,080	
	Accumulated Postretirement Benefit Obligation		34,080

Ledgers

Postretirement Expense

12/31/X4 26,000 (10.11.7)	
12/31/X4 34,080 (10.11.9)	
balance 60,080	

Accumulated Postretirement Benefit Obligation

	01/01/X4 426,000 (10.11.6)
	12/31/X4 26,000 (10.11.7)
	12/31/X4 34,080 (10.11.7)
	balance 486,080

3. **Journal Entry for Increase In Postretirement Plan Assets**

		Debit	Credit
12/31/XX	Postretirement Plan Assets	(10.11.10)	
	Postretirement Expense		(10.11.10)

		Debit	Credit
12/31/X4	Postretirement Plan Assets	600	
	Postretirement Expense		600

Ledgers

Postretirement Expense

12/31/X4 26,000 (10.11.7)	
12/31/X4 34,080 (10.11.9)	
	12/31/X4 600 (10.11.10)
balance 60,080	

Postretirement Plan Assets

01/01/X4 10,000 (10.11.6)	
12/31/X4 600 (10.11.10)	
balance 10,600	

4. **Journal Entry for Postretirement Contributions**

		Debit	Credit
12/31/XX	Postretirement Plan Assets (10.11.6)	(10.11.11)	
	Cash		(10.11.11)

		Debit	Credit
12/31/X4	Postretirement Plan Assets 50,000		
	Cash		50,000

Ledger

Postretirement Plan Assets

01/01/X4 10,000 (10.11.6)	
12/31/X4 600 (10.11.10)	
12/31/X4 50,000 (10.11.11)	
balance 60,600	

5. **Postretirement Unrecognized Transition Amortization (10.11.12)**

$$\text{Postretirement Unrecognized Transition Amortization} = \frac{\text{Unrecognized Transition Amount (10.11.5) Opening Balance}}{\text{Average Remaining Service-Years Participating Employees (10.6.12)}}$$

$$\text{Postretirement Unrecognized Transition Amortization} = \frac{400{,}000}{25} = 16{,}000$$

Journal Entry

		Debit	Credit
12/31/XX	Postretirement Expense	(10.11.12)	
	Unrecognized Transition Amount		(10.11.12)

		Debit	Credit
12/31/X4	Postretirement Expense	16,000	
	Unrecognized Transition Amount		16,000

Ledgers

Postretirement Expense

12/31/X4 26,000 (10.11.7)	
12/31/X4 34,080 (10.11.9)	
	12/31/X4 600 (10.11.10)
12/31/X4 16,000 (10.11.12)	
balance 76,080	

Unrecognized Transition Amount

01/01/X4 384,000 (10.11.5)	
	12/31/X4 16,000 (10.11.12)
balance 368,000	

6. **Journal Entry for Postretirement Benefits Paid**

		Debit	Credit
12/31/XX	Accumulated Postretirement Benefit Obligation	(10.11.13)	
	Postretirement Plan Assets		(10.11.13)

		Debit	Credit
12/31/X4	Accumulated Postretirement Benefit Obligation	35,000	
	Postretirement Plan Assets		35,000

Ledgers

Postretirement Plan Assets

01/01/X4 10,000 (10.11.6)	
12/31/X4 600 (10.11.10)	
12/31/X4 50,000 (10.11.11)	
	12/31/X4 35,000 (10.11.13)
balance 25,600	

Accumulated Postretirement Benefit Obligation

	01/01/X4 426,000 (10.11.6)
	12/31/X4 26,000 (10.11.7)
	12/31/X4 34,080 (10.11.7)
12/31/X4 35,000 (10.11.13)	
	balance 451,080

7. **Postretirement Plan Assets Expected Return (10.12.2)**

Postretirement Plan Assets Expected Return = Postretirement Plan Assets (10.11.6) Beginning Balance × Expected Rate of Postretirement Return (10.12.1)

Postretirement Plan Assets Expected Return = 10,000 × 0.08
= 800

8. **Postretirement Unexpected Net Gain/(Loss) (10.12.4)**

Postretirement Unexpected Net Gain/(Loss) = Postretirement Plan Assets Return (10.11.10) – Postretirement Plan Assets Expected Return (10.12.2)

Postretirement Unexpected Net Gain/(Loss) = 600 – 800
= -200

Journal Entry, If Unexpected Net (Loss)

		Debit	Credit
12/31/XX	Postretirement Unrecognized Net Gain/Loss (10.12.3)	(10.12.4)	
	Postretirement Expense (10.11.1)		(10.12.4)

		Debit	Credit
12/31/X4	Postretirement Unrecognized Net Gain/Loss (10.12.3)	200	
	Postretirement Expense (10.11.1)		200

Ledgers

Postretirement Expense

12/31/X4 26,000 (10.11.7)	
12/31/X4 34,080 (10.11.9)	
	12/31/X4 600 (10.11.10)
12/31/X4 16,000 (10.11.12)	
	12/31/X4 200 (10.12.4)
balance 75,280	

Postretirement Expense = $75,280

Postretirement Unrecognized Net Gain/Loss

12/31/X4 200 (10.12.4)	
balance 200	

9. **Journal Entry, If Postretirement Liability (Loss)**

		Debit	Credit
12/31/XX	Postretirement Unrecognized Net Gain/Loss (10.12.3)	(10.12.5)	
	Accumulated Postretirement Benefit Obligation		(10.12.5)

		Debit	Credit
12/31/X4	Postretirement Unrecognized Net Gain/Loss (10.12.3)	60,000	
	Accumulated Postretirement Benefit Obligation		60,000

Ledgers

Postretirement Unrecognized Net Gain/Loss

12/31/X4 200 (10.12.4)	
12/31/X4 60,000 (10.12.5)	
balance 60,200	

Accumulated Postretirement Benefit Obligation

	01/01/X4 426,000 (10.11.6)
	12/31/X4 26,000 (10.11.7)
	12/31/X4 34,080 (10.11.7)
12/31/X4 35,000 (10.11.13)	
	12/31/X4 60,000 (10.12.5)
	balance 511,080

10. **Accumulated Postretirement Benefit Obligation Corridor (10.12.6)**

Accumulated Postretirement Benefit Obligation Corridor = Accumulated Postretirement Benefit Obligation Beginning Balance × 0.10

Accumulated Postretirement Benefit Obligation Corridor = 426,000 × 0.10
= 42,600

11. **Postretirement Plan Assets Corridor (10.12.7)**

Postretirement Plan Assets Corridor = Postretirement Plan Assets Beginning Balance × 0.10

Postretirement Plan Assets Corridor = 10,000 × 0.10
= 100

12. **Postretirement Corridor Amount (10.12.8)**

If Accumulated Postretirement Benefit Obligation Corridor (10.12.6) > Postretirement Plan Assets Corridor (10.12.7) then
Postretirement Corridor Amount = Accumulated Postretirement Benefit Obligation Corridor (10.12.6)

If Postretirement Plan Assets Corridor (10.12.7) > Accumulated Postretirement Benefit Obligation Corridor (10.12.6) then
Postretirement Corridor Amount = Postretirement Plan Assets Corridor (10.12.7)
Postretirement Corridor Amount = 42,600

13. **Possible Postretirement Corridor Amortization (10.12.9)**

Possible Postretirement Corridor Amortization = Postretirement Unrecognized Net Gain/Loss Beginning Balance (10.12.3)
Postretirement Corridor Amount (10.12.8)

Possible Postretirement Corridor Amortization = 0 – 42,600
= -42,600

Since Possible Corridor Amortization < 0 then Smoothing Gains and Losses (10.6) is complete.

14. **Accumulated Postretirement and Retirement Plan Assets Closing Entries**

Journal Entry (10.11.14)

		Debit	Credit
12/31/XX	Accumulated Postretirement Benefit Obligation	(10.11.3) Ending Balance	
	Prepaid/Accrued Postretirement Cost (10.11.4)		(10.11.3) Ending Balance

		Debit	Credit
12/31/X4	Accumulated Postretirement Benefit Obligation	511,080	
	Prepaid/Accrued Postretirement Cost (10.11.4)		511,080

Journal Entry (10.11.14)

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.6) Ending Balance	
	Postretirement Plan Assets		(10.11.6) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Postretirement Cost (10.11.4)	25,600	
	Postretirement Plan Assets		25,600

15. **Unrecognized Transition Amount Closing Entries (10.11.15)**

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Cost (10.11.4)	(10.11.5) Ending Balance	
	Unrecognized Transition Amount		(10.11.5) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Postretirement Cost (10.11.4)	368,000	
	Unrecognized Transition Amount		368,000

16. **Postretirement Unrecognized Net Gain/Loss Closing Entry (10.12.12)**

Journal Entry, If Debit Balance

		Debit	Credit
12/31/XX	Prepaid/Accrued Postretirement Costs (10.11.4)	(10.12.3) Ending Balance	
	Postretirement Unrecognized Net Gain/Loss		(10.12.3) Ending Balance

		Debit	Credit
12/31/X4	Prepaid/Accrued Postretirement Costs (10.11.4)	60,200	
	Postretirement Unrecognized Net Gain/Loss		60,200

Ledger

Prepaid/Accrued Postretirement Cost

	12/31/X4 511,080 (10.11.3)
12/31/X4 25,600 (10.11.6)	
12/31/X4 368,000 (10.11.5)	
12/31/X4 60,200 (10.12.3)	
	balance 57,280

Prepaid/Accrued Postretirement Cost = $57,280 Accrued Postretirement Cost.

Chapter 11

Interperiod Tax Examples

11.1 Proportional Taxes Example

Example 81:
Purchase Price = \$6,000.
Sales tax rate = 7%.

What is the tax liability?
What is the average tax rate?

Solution 81:

1. **Proportional Tax Liability Amount (11.1.6)**
   Proportional Tax Liability Amount = Purchase Price (11.1.2) × Sales Tax Rate (11.1.3)
   Proportional Tax Liability Amount = 6,000 × 0.07 = \$420

2. **Average Tax Rate (11.1.5)**
   $$\text{Average Tax Rate} = \frac{\text{Tax Liability Amount (11.1.4)}}{\text{Tax Base Amount (11.1.2)}}$$
   $$\text{Average Tax Rate} = \frac{420}{6{,}000} = 0.07$$

11.2 Progressive or Regressive Taxes Example

Example 82:
Taxable Income = \$200,000.

What is the Corporate 2007 tax liability?
What is the average tax rate?

Solution 82:

1. **Corporate 2007 Progressive or Regressive Tax Rate Schedule (11.1.9)**

Corporate 2007 Tax Rate Schedule					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000		
50,000	75,000	25%	25,000		
75,000	100,000	34%	25,000		
100,000	335,000	39%	235,000		
335,000	10,000,000	34%	9,665,000		
10,000,000	15,000,000	35%	5,000,000		
15,000,000	18,333,333	38%	3,333,333		
18,333,333	Infinity	35%	Infinity		
					$\sum$ = (11.1.7)

2. **Progressive or Regressive Tax Liability Algorithm (11.1.10)**
   1 Remaining = Tax Base Amount (11.1.2)
   2 For L in each layer from top to bottom:
   2.1 If Remaining <= Difference_L then:
   2.2 Layer Amount_L = Remaining
   2.3 Tax Amount_L = $\text{Layer Amount}_L \times \text{Marginal Rate}_L$
   2.4 Remaining = 0
   2.5 Goto step 3
   2.6 If Remaining > Differences_L then:
   2.7 Layer Amount_L = Difference_L
   2.8 Tax Amount_L = $\text{Layer Amount}_L \times \text{Marginal Rate}_L$
   2.9 Remaining = Remaining - Difference_L
   3 For L in each layer from top to bottom:
   3.1 Tax Liability Amount (11.1.7) = Tax Liability Amount + Tax Amount_L

3. **Remaining = Tax Base Amount (11.1.2)**
   Remaining = 200,000

4. **Populate Layer Amount and Tax Amount**
   2.6 Since Remaining > Difference_1 then:
   2.7 Layer Amount_1 = Difference_1
   2.8 Tax Amount_1 = $\text{Layer Amount}_1 \times \text{Marginal Rate}_1$
   2.9 Remaining = Remaining - Difference_1

Corporate 2007 Tax Rate Schedule

Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000	50,000	7,500

Remaining = ~~200,000~~ 150,000
   2.6 Since Remaining > Difference_2 then:
   2.7 Layer Amount_2 = Difference_2
   2.8 Tax Amount_2 = $\text{Layer Amount}_2 \times \text{Marginal Rate}_2$
   2.9 Remaining = Remaining - Difference_2

Corporate 2007 Tax Rate Schedule

Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000	50,000	7,500
50,000	75,000	25%	25,000	25,000	6,250

Remaining = ~~200,000~~ ~~150,000~~ 125,000
   2.6 Since Remaining > Difference_3 then:
   2.7 Layer Amount_3 = Difference_3
   2.8 Tax Amount_3 = $\text{Layer Amount}_L \times \text{Marginal Rate}_3$
   2.9 Remaining = Remaining - Difference_3

Corporate 2007 Tax Rate Schedule

Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000	50,000	7,500
50,000	75,000	25%	25,000	25,000	6,250
75,000	100,000	34%	25,000	25,000	8,500

Remaining = ~~200,000~~ ~~150,000~~ ~~125,000~~ 100,000
   2.1 Since Remaining <= Difference_4 then:
   2.2 Layer Amount_4 = Remaining
   2.3 Tax Amount_4 = $\text{Layer Amount}_4 \times \text{Marginal Rate}_4$
   2.4 Remaining = 0
   2.5 Goto step 3

Corporate 2007 Tax Rate Schedule

Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000	50,000	7,500
50,000	75,000	25%	25,000	25,000	6,250
75,000	100,000	34%	25,000	25,000	8,500
100,000	335,000	39%	235,000	100,000	39,000

Remaining = ~~200,000~~ ~~150,000~~ ~~125,000~~ ~~100,000~~ 0

3 For L in each layer from top to bottom:
3.1 Tax Liability Amount (11.1.7) = Tax Liability Amount + Tax Amount$_L$

Corporate 2007 Tax Rate Schedule

Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	50,000	15%	50,000	50,000	7,500
50,000	75,000	25%	25,000	25,000	6,250
75,000	100,000	34%	25,000	25,000	8,500
100,000	335,000	39%	235,000	100,000	39,000
					$\sum$ (11.1.7) = \$61,250

Tax Liability Amount (11.1.7) = \$61,250

5. **Average Tax Rate (11.1.5)**

$$\text{Average Tax Rate} = \frac{\text{Tax Liability Amount (11.1.4) or (11.1.7)}}{\text{Tax Base Amount (11.1.2)}}$$

$$\text{Average Tax Rate} = \frac{61{,}250}{200{,}000} = 0.31$$

11.3 Interperiod Tax Journal Entry: Max Company – Year 1

Example 83:
Credit Sales = \$90,000.
Credit Sales Collections = \$0.
Estimated Warranty Expense = \$30,000.
Warranty Claims = \$10,000.
Pretax Accounting Income = \$100,000.
Current Average Tax Rate = 30%.
Enacted Marginal Tax Rate = 40%.

Calculate Net Income.
Prepare the interperiod tax journal entry.

Solution 83:

1. **Temporary Difference Current Asset (11.4.1)**

Temporary Difference Current Asset = (Estimated Warranty Expense – Warranty Claims) +
(Estimated Bad Debt Expense – Bad Debt Write Offs) +
(Estimated Expense – Cash Paid On Previous Estimations) +
(Accrued Wages – Accrued Wages Paid) +
(Estimated Discontinued Operations – Discontinued Operations Realized) +
(Litigation Loss Estimate – Litigation Loss Realized) +
(Cash Collected In Advance – Deliveries From Cash Collected In Advance) +
(Loss Recording Inventory at LCM – Realized Loss) +
[Loss Carryforward – (Net Income – Loss Carryforward Balance)]

Temporary Difference Current Asset = (30,000 – 10,000) = 20,000

2. **Temporary Difference Current Liability (11.4.3)**

Temporary Difference Current Liability = (Credit Sales – Cash Collected On Credit Sales) +
(Prepaid Expenses – Prepaid Consumed)

Temporary Difference Current Liability = (90,000 – 0) = 90,000

3. **Temporary Difference Asset (11.4.5)**

Temporary Difference Asset = Temporary Difference Current Asset (11.4.1) +
Temporary Difference Noncurrent Asset (11.4.2)

Temporary Difference Asset = 20,000 + 0 = 20,000

4. **Temporary Difference Liability (11.4.6)**

Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) +
Temporary Difference Noncurrent Liability (11.4.4)

Temporary Difference Liability = 90,000 + 0 = 90,000

5. **Deferred Tax Current Asset (11.5.1)**
   Deferred Tax Current Asset = Temporary Difference Current Asset (11.4.1) × Enacted Marginal Tax Rate (11.1.8)
   Deferred Tax Current Asset = 20,000 × 0.40 = 8,000

6. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) × Enacted Marginal Tax Rate (11.1.8)
   Deferred Tax Current Liability = 90,000 × 0.40 = 36,000

7. **Deferred Tax Asset (11.5.5)**
   Deferred Tax Asset = Deferred Tax Current Asset (11.5.1) + Deferred Tax Noncurrent Asset (11.5.2)
   Deferred Tax Asset = 8,000 + 0 = 8,000

8. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) + Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = 36,000 + 0 = 36,000

9. **Taxable Income (11.6.1)**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 100,000 + 20,000 – 90,000 – 0 = 30,000

10. **Income Tax Payable (11.6.2)**
    Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate (11.1.5)
    Income Tax Payable = 30,000 × 0.30 = 9,000

11. **Deferred Portion of Income Tax Expense (11.6.3)**
    Deferred Portion of Income Tax Expense = [Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)]
    Deferred Portion of Income Tax Expense = 36,000 – 8,000 = 28,000

12. **Income Tax Expense (11.6.4)**
    Income Tax Expense = Current Portion of Income Tax Expense (11.6.2) + Deferred Portion of Income Tax Expense (11.6.3)
    Income Tax Expense = 9,000 + 28,000 = 37,000

13. **Net Income (11.6.6)**
    Net Income = Pretax Accounting Income (11.3.3) – Income Tax Expense (11.6.4)
    Net Income = 100,000 – 37,000 = 63,000

14. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/01	Income Tax Expense	37,000	
	Deferred Tax Current Asset	8,000	
	Deferred Tax Current Liability		36,000
	Income Tax Payable		9,000

11.4 Interperiod Tax Journal Entry: Max Company – Year 2

Example 84:
Credit Sales = $120,000.
Credit Sales Collections = $50,000.
Estimated Warranty Expense = $40,000.
Warranty Claims = $15,000.
Pretax Accounting Income = $80,000.
Current Average Tax Rate = 40%.
Enacted Marginal Tax Rate = 40%.

Calculate Net Income.
Prepare the interperiod tax journal entry.

Solution 84:

1. **Temporary Difference Current Asset (11.4.1)**
   Temporary Difference Current Asset = (Estimated Warranty Expense – Warranty Claims) +
   (Estimated Bad Debt Expense – Bad Debt Write Offs) +
   (Estimated Expense – Cash Paid On Previous Estimations) +
   (Accrued Wages – Accrued Wages Paid) +
   (Estimated Discontinued Operations – Discontinued Operations Realized) +
   (Litigation Loss Estimate – Litigation Loss Realized) +
   (Cash Collected In Advance – Deliveries From Cash Collected In Advance) +
   (Loss Recording Inventory at LCM – Realized Loss) +
   [Loss Carryforward – (Net Income – Loss Carryforward Balance)]
   Temporary Difference Current Asset = (40,000 – 15,000) = 25,000

2. **Temporary Difference Current Liability (11.4.3)**
   Temporary Difference Current Liability = (Credit Sales – Cash Collected On Credit Sales) +
   (Prepaid Expenses – Prepaid Consumed)
   Temporary Difference Current Liability = (120,000 – 50,000) = 70,000

3. **Temporary Difference Asset (11.4.5)**
   Temporary Difference Asset = Temporary Difference Current Asset (11.4.1) +
   Temporary Difference Noncurrent Asset (11.4.2)
   Temporary Difference Asset = 25,000 + 0 = 25,000

4. **Temporary Difference Liability (11.4.6)**
   Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) +
   Temporary Difference Noncurrent Liability (11.4.4)
   Temporary Difference Liability = 70,000 + 0 = 70,000

5. **Deferred Tax Current Asset (11.5.1)**
   Deferred Tax Current Asset = Temporary Difference Current Asset (11.4.1) ×
   Enacted Marginal Tax Rate (11.1.8)
   Deferred Tax Current Asset = 25,000 × 0.40 = 10,000

6. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) ×
   Enacted Marginal Tax Rate (11.1.8)
   Deferred Tax Current Liability = 70,000 × 0.40 = 28,000

7. **Deferred Tax Asset (11.5.5)**
   Deferred Tax Asset = Deferred Tax Current Asset (11.5.1) +
   Deferred Tax Noncurrent Asset (11.5.2)
   Deferred Tax Asset = 10,000 + 0 = 10,000

8. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) +
   Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = 28,000 + 0 = 28,000

9. **Taxable Income (11.6.1)**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 80,000 + 25,000 – 70,000 – 0 = 35,000

10. **Income Tax Payable (11.6.2)**
    Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate (11.1.5)
    Income Tax Payable = 35,000 × 0.40 = 14,000

11. **Deferred Portion of Income Tax Expense (11.6.3)**
    Deferred Portion of Income Tax Expense = [Deferred Tax Liability (11.5.6) –
    Deferred Tax Asset (11.5.5)]
    Deferred Portion of Income Tax Expense = 28,000 – 10,000 = 18,000

12. **Income Tax Expense (11.6.4)**
    Income Tax Expense = Current Portion of Income Tax Expense (11.6.2) +
    Deferred Portion of Income Tax Expense (11.6.3)
    Income Tax Expense = 14,000 + 18,000 = 32,000

13. **Net Income (11.6.6)**
    Net Income = Pretax Accounting Income (11.3.3) –
    Income Tax Expense (11.6.4)
    Net Income = 80,000 – 32,000 = 48,000

14. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/02	Income Tax Expense	32,000	
	Deferred Tax Current Asset	10,000	
	Deferred Tax Current Liability		28,000
	Income Tax Payable		14,000

11.5 Interperiod Tax Journal Entry: Smith, Inc.

Example 85:
Revenues Same GAAP and Tax = $90,000.
Expenses Same GAAP and Tax = $71,000.
Amortization never deductible for tax = $6,000.
Rent collected at end of year = $5,000.
Estimated warranty expense = $4,000.
Warrancy claims = $0.
Current Average Tax Rate = 30%.
Current Marginal Tax Rate = 30%.

Prepare the interperiod tax journal entry.

Solution 85:

1. **Nondeductible Expenses (11.2.2)**
   Nondeductible Expenses = Fines and penalties +
   Premiums on life insurance policies +
   Other expenses never deductible
   Nondeductible Expenses = 6,000

2. **Income Statement Revenues (11.3.1)**
   Income Statement Revenues = Revenues Same GAAP and Tax +
   Nontaxable Revenue (11.2.1) +
   Credit Sales +
   Service Performed But Not Collected +
   Revenue Recognized on Previous Collections
   Income Statement Revenues = 90,000

3. **Income Statement Expenses (11.3.2)**
   Income Statement Expenses = Expenses Same GAAP and Tax +
   Nondeductible Expenses (11.2.2) +
   Estimated Warranty Costs +
   Estimated Bad Debt Expense +
   Accrued Wages +
   Depreciation Expense
   Income Statement Expenses = 71,000 + 6,000 + 4,000 = 81,000

4. **Net Permanent Difference (11.2.3)**
   Net Permanent Difference = Nontaxable Revenues (11.2.1) –
   Nondeductible Expenses (11.2.2)
   Net Permanent Difference = 0 – 6,000 = -6,000

5. **Pretax Accounting Income (11.3.3)**
   Pretax Accounting Income = Income Statement Revenues (11.3.1) –
   Income Statement Expenses (11.3.2)
   Pretax Accounting Income = 90,000 – 81,000 = 9,000

6. **Temporary Difference Current Asset (11.4.1)**
   Temporary Difference Current Asset = (Estimated Warranty Expense – Warranty Claims) +
   (Estimated Bad Debt Expense – Bad Debt Write Offs) +
   (Estimated Expense – Cash Paid On Previous Estimations) +
   (Accrued Wages – Accrued Wages Paid) +
   (Estimated Discontinued Operations – Discontinued Operations Realized) +
   (Litigation Loss Estimate – Litigation Loss Realized) +
   (Cash Collected In Advance – Deliveries From Cash Collected In Advance) +
   (Loss Recording Inventory at LCM – Tax Benefit Upon Sale) +
   [Loss Carryforward – (Net Income – Loss Carryforward Balance)]
   Temporary Difference Current Asset = (4,000 – 0) + (5,000 – 0) = 9,000

7. **Temporary Difference Asset (11.4.5)**
   Temporary Difference Asset = Temporary Difference Current Asset (11.4.1) +
   Temporary Difference Noncurrent Asset (11.4.2)
   Temporary Difference Asset = 9,000 + 0 = 9,000

8. **Deferred Tax Current Asset (11.5.1)**
   Deferred Tax Current Asset = Temporary Difference Current Asset (11.4.1) ×
   Enacted Marginal Tax Rate
   Deferred Tax Current Asset = 9,000 × 0.30 = 2,700

9. **Deferred Tax Asset (11.5.5)**
   Deferred Tax Asset = Deferred Tax Current Asset (11.5.1) +
   Deferred Tax Noncurrent Asset (11.5.2)
   Deferred Tax Asset = 2,700 + 0 = 2,700

10. **Taxable Income (11.6.1)**

Taxable Income =	+ Pretax Accounting Income (11.3.3)	9,000
	+ Temporary Difference Asset (11.4.5)	9,000
	– Temporary Difference Liability (11.4.6)	0
	– Net Permanent Difference (11.2.3)	-6,000
Taxable Income =		24,000

11. **Income Tax Payable (11.6.2)**
    Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate
    Income Tax Payable = 24,000 × 0.30 = 7,200

12. **Income Tax Expense (11.6.4)**
    Income Tax Expense = Income Tax Payable (11.6.2) +
    [Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)]
    Income Tax Expense = 7,200 + [0 – 2,700] = 4,500

13. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/XX	Income Tax Expense	4,500	
	Deferred Tax Current Asset	2,700	
	Income Tax Payable		7,200

11.6 Calculate Net Income: Jones, Inc.

Example 86:
In year 1, Jones, Inc. has revenue of $200 for both books and tax. It also has a fine of $10 which is not tax deductible. Tax rate is 20%. What is the net income?

Solution 86:
Revenues Same GAAP and Tax = 200
Fines and penalties = 10
Current Average Tax Rate = 0.20
Current Marginal Tax Rate = 0.20

1. **Nondeductible Expenses (11.2.2)**
   Nondeductible Expenses = Fines and penalties +
   Premiums of life insurance policies
   Nondeductible Expenses = 10

2. **Income Statement Revenues (11.3.1)**
   Income Statement Revenues = Revenues Same GAAP and Tax +
   Nontaxable Revenue (11.2.1) +
   Credit Sales +
   Service Performed But Not Collected +
   Revenue Recognized on Previous Collections
   Income Statement Revenues = 200

3. **Income Statement Expenses (11.3.2)**
   Income Statement Expenses = Expenses Same GAAP and Tax +
   Nondeductible Expenses (11.2.2) +
   Estimated Warranty Costs +
   Estimated Bad Debt Expense +
   Accrued Wages +
   Depreciation Expense
   Income Statement Expenses = 10

4. **Pretax Accounting Income (11.3.3)**
   Pretax Accounting Income = Income Statement Revenues (11.3.1) –
   Income Statement Expenses (11.3.2)
   Pretax Accounting Income = 200 – 10 = 190

5. **Net Permanent Difference (11.2.3)**
   Net Permanent Difference = Nontaxable Revenues (11.2.1) –
   Nondeductible Expenses (11.2.2)
   Net Permanent Difference = 0 – 10 = -10

6. **Taxable Income (11.6.1)**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 190 + 0 – 0 – (-10) = 200

7. **Income Tax Payable (11.6.2)**
   Income Tax Payable = Taxable Income (11.6.1) ×
   Current Average Tax Rate
   Income Tax Payable = 200 × 0.2 = 40

8. **Income Tax Expense (11.6.4)**
   Income Tax Expense = Income Tax Payable (11.6.2) +
   [Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)]
   Income Tax Expense = 40 + [0.0 – 0.0] = 40

9. **Net Income (11.6.6)**
   Net Income = Pretax Accounting Income (11.3.3) –
   Income Tax Expense (11.6.4)
   Net Income = 190 – 40 = 150

11.7 Calculate Income Tax Expense: Williard Company – Year 1

Example 87:
Williard Company reported $5,000 pretax accounting income for the year ended December 31, 20X1, the first year of operation. Williard made installment sales with revenue of $600 during 20X1 to be collected evenly over 3 years, starting with the current year. The current tax rate is 40%, but Congress enacted a future tax rate of 30%. What is the income tax expense?

Solution 87:
Pretax Accounting Income = 5,000
Credit Sales = 600
Cash Collected On Credit Sales = 200
Current Average Tax Rate = 0.40
Enacted Marginal Tax Rate = 0.30

1. **Temporary Difference Current Liability (11.4.3)**
   Temporary Difference Current Liability = (Credit Sales - Cash Collected On Credit Sales) +
   (Prepaid Expenses - Prepaid Consumed)
   Temporary Difference Current Liability = 600 – 200 = 400

2. **Temporary Difference Liability (11.4.6)**
   Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) +
   Temporary Difference Noncurrent Liability (11.4.4)
   Temporary Difference Liability = 400 + 0 = 400

3. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) ×
   Enacted Marginal Tax Rate
   (11.5.3) Deferred Tax Current Liability = 400 × 0.30 = 120

4. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) +
   Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = 120 + 0 = 120

5. **Taxable Income (11.6.1)**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 5,000 + 0 – 400 – 0 = 4,600

6. **Income Tax Payable (11.6.2)**
   Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate
   Income Tax Payable = 4,600 × 0.40 = 1,840

7. **Income Tax Expense (11.6.4)**
   Income Tax Expense = Income Tax Payable (11.6.2) + [Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)]
   Income Tax Expense = 1,840 + [120 – 0.0] = 1,960

8. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/X1	Income Tax Expense	1,960	
	Deferred Tax Current Liability		120
	Income Tax Payable		1,840

Ledger

Deferred Tax Current Liability

	12/31/X1 120
	balance 120

11.8 Calculate Income Tax Expense: Williard Company – Year 2

Example 88:
Williard Company reported $6,000 pretax accounting income for the year ended December 31, 20X2, the second year of operation. Williard made installment sales with revenue of $800 during 20X2 to be collected evenly over 2 years, starting with the current year. Also collected was $200 from the previous year's credit sale. The current tax rate is 30%. What is the income tax expense?

Solution 88:
Pretax Accounting Income = 6,000
Credit Sales = 800
Cash Collected On Credit Sales = 600
Current Average Tax Rate = 0.30
Enacted Marginal Tax Rate = 0.30

1. **Temporary Difference Current Liability (11.4.3)**
   Temporary Difference Current Liability = (Credit Sales - Cash Collected On Credit Sales) + (Prepaid Expenses - Prepaid Consumed)
   Temporary Difference Current Liability = 800 – 600 = 200

2. **Temporary Difference Liability (11.4.6)**
   Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) + Temporary Difference Noncurrent Liability (11.4.4)
   Temporary Difference Liability = 200 + 0 = 200

3. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) × Enacted Marginal Tax Rate
   Deferred Tax Current Liability = 200 × 0.30 = 60

4. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) + Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = 60 + 0 = 60

5. **Taxable Income (11.6.1**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 6,000 – 200 = 5,800

6. **Income Tax Payable (11.6.2)**
   Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate
   Income Tax Payable = 5,800 × 0.30 = 1,740

7. **Income Tax Expense (11.6.4)**
   Income Tax Expense = Income Tax Payable (11.6.2) + Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)
   Income Tax Expense = 1,740 + 60 – 0.0 = 1,800

8. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/X2	Income Tax Expense	1,800	
	Deferred Tax Current Liability		60
	Income Tax Payable		1,740

Ledger

Deferred Tax Current Liability
12/31/X1 120
12/31/X2 60
balance 180

11.9 Calculate Effective Tax Rate: Blue Paper – Year 1

Example 89:
Blue Paper company has the following summary:
Year ended = December 31, 20X1.
Pretax accounting income = $200,000.
Credit sales = $18,000.
The current tax rate is 30%.
What is the income tax expense?
What is the effective tax rate?

Solution 89:

Pretax Accounting Income = 200,000
Credit Sales = 18,000
Current Average Tax Rate = 0.30
Enacted Marginal Tax Rate = 0.30

1. **Temporary Difference Current Liability (11.4.3)**
   Temporary Difference Current Liability = (Credit Sales - Cash Collected On Credit Sales) + (Prepaid Expenses - Prepaid Consumed)
   Temporary Difference Current Liability = 18,000 – 0 = 18,000

2. **Temporary Difference Liability (11.4.6)**
   Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) + Temporary Difference Noncurrent Liability (11.4.4)
   Temporary Difference Liability = 18,000 + 0 = 18,000

3. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) × Enacted Marginal Tax Rate
   Deferred Tax Current Liability = 18,000 × 0.30 = 5,400

4. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) + Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = 5,400 + 0 = 5,400

5. **Taxable Income (11.6.1)**
   Taxable Income = + Pretax Accounting Income (11.3.3)
   + Temporary Difference Asset (11.4.5)
   – Temporary Difference Liability (11.4.6)
   – Net Permanent Difference (11.2.3)
   Taxable Income = 200,000 – 18,000 = 182,000

6. **Income Tax Payable (11.6.2)**
   Income Tax Payable = Taxable Income (11.6.1) × Current Average Tax Rate
   Income Tax Payable = 182,000 × 0.30 = 54,600

7. **Income Tax Expense (11.6.4)**
   Income Tax Expense = Income Tax Payable (11.6.2) + Deferred Tax Liability (11.5.6) – Deferred Tax Asset (11.5.5)
   Income Tax Expense = 54,600 + 5,400 – 0 = 60,000

8. **Net Income (11.6.6)**
   Net Income = Pretax Accounting Income (given) – Income Tax Expense (11.6.4)
   Net Income = 200,000 – 60,000 = 140,000

9. **Effective Tax Rate (11.7.3)**
   Effective Tax Rate = Income Tax Expense (11.6.4) ÷ Pretax Accounting Income (given)
   Effective Tax Rate = 60,000 ÷ 200,000 = 0.30

10. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/X1	Income Tax Expense	60,000	
	Deferred Tax Current Liability		5,400
	Income Tax Payable		54,600

Ledger

Deferred Tax Current Liability

	12/31/X1 5,400

11.10 Calculate Effective Tax Rate: Blue Paper – Year 2

Example 90:
The next year, Blue Paper company has the following summary:
Year ended = December 31, 20X2.
Pretax accounting income = $200,000.
Premium on life insurance policy = $5,000.
Cash collected on credit sales = $12,000.
The current tax rate is 30%.
What is the income tax expense?
What is the effective tax rate?

Solution 90:
Pretax Accounting Income = 200,000
Premiums on life insurance policies = 5,000
Cash collected on credit sales = 12,000
Current Average Tax Rate = 0.30
Enacted Marginal Tax Rate = 0.30

1. **Nondeductible Expenses (11.2.2)**
   Nondeductible Expenses = Fines and penalties +
   Premiums on life insurance policies
   Nondeductible Expenses = 5,000

2. **Net Permanent Difference (11.2.3)**
   Net Permanent Difference = Nontaxable Revenues (11.2.1) –
   Nondeductible Expenses (11.2.2)
   Net Permanent Difference = 0 – 5,000 = -5,000

3. **Temporary Difference Current Liability (11.4.3)**
   Temporary Difference Current Liability = (Credit Sales - Cash Collected On Credit Sales) +
   (Prepaid Expenses - Prepaid Consumed)
   Temporary Difference Current Liability = 0 - 12,000 = -12,000

4. **Temporary Difference Liability (11.4.6)**
   Temporary Difference Liability = Temporary Difference Current Liability (11.4.3) +
   Temporary Difference Noncurrent Liability (11.4.4)
   Temporary Difference Liability = -12,000 + 0 = -12,000

5. **Deferred Tax Current Liability (11.5.3)**
   Deferred Tax Current Liability = Temporary Difference Current Liability (11.4.3) ×
   Enacted Marginal Tax Rate
   Deferred Tax Current Liability = -12,000 × 0.30 = -3,600

6. **Deferred Tax Liability (11.5.6)**
   Deferred Tax Liability = Deferred Tax Current Liability (11.5.3) +
   Deferred Tax Noncurrent Liability (11.5.4)
   Deferred Tax Liability = -3,600 + 0 = -3,600

7. **Taxable Income (11.6.1)**

Taxable Income = + Pretax Accounting Income (11.3.3)
+ Temporary Difference Asset (11.4.5)
– Temporary Difference Liability (11.4.6)
– Net Permanent Difference (11.2.3)
Taxable Income = 200,000 + 0 – (-12,000) – (-5,000) = 217,000

8. **Income Tax Payable (11.6.2)**
Income Tax Payable = Taxable Income (11.6.1) ×
Current Average Tax Rate
Income Tax Payable = 217,000 × 0.30 = 65,100

9. **Income Tax Expense (11.6.4)**
Income Tax Expense = Income Tax Payable (11.6.2) +
Deferred Tax Liability (11.5.6) –
Deferred Tax Asset (11.5.5)
Income Tax Expense = 65,100 + (-3,600) – 0 = 61,500

10. **Net Income (11.6.6)**
Net Income = Pretax Accounting Income (given) –
Income Tax Expense (11.6.4)
Net Income = 200,000 – 65,500 = 138,500

11. **Effective Tax Rate (11.7.3)**
Effective Tax Rate = Income Tax Expense (11.6.4) ÷
Pretax Accounting Income (given)
Effective Tax Rate = 61,500 ÷ 200,000 = 0.3075

12. **Interperiod Tax Journal Entry (11.6.5)**

		Debit	Credit
12/31/XX	Income Tax Expense	(11.6.4)	
	Deferred Tax Current Asset	(11.5.1)	
	Deferred Tax Noncurrent Asset	(11.5.2)	
	Deferred Tax Current Liability		(11.5.3)
	Deferred Tax Noncurrent Liability		(11.5.4)
	Income Tax Payable		(11.6.2)

		Debit	Credit
12/31/X2	Income Tax Expense	61,500	
	Deferred Tax Current Liability	3,600	
	Income Tax Payable		65,100

Ledger

Deferred Tax Current Liability

	12/31/X1 5,400
12/31/X2 3,600	
	balance 1,800

Chapter 12

Foreign Transactions Examples

12.1 Purchase Transaction, Immediate Payment

Example 91
Transaction quantity = 12,500.
Cost per unit = 20 Euros.
Transaction date = 11/8/X5.
Settlement date = 11/8/X5.
Spot rate 11/8/X5: 1 Euro = $0.8555.
Record the purchase journal entry.

Solution 91:

1. **Transaction Amount (12.1.17)**
   Transaction Amount = Quantity × Cost Per Unit In Foreign Denomination (12.1.1)
   Transaction Amount = 12,500 × 20 = 250,000
2. **Purchase Dollar Equivalent (12.1.18)**
   Purchase Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Exchange Rate (12.1.11)
   Purchase Dollar Equivalent = 250,000 × 0.8555 = 213,875
3. **Immediate Payment Purchase Transaction (12.2.1)**

		Debit	Credit
XX/XX/XX	Inventory	Purchase Dollar Equivalent (12.1.18)	
	Cash		Purchase Dollar Equivalent (12.1.18)

		Debit	Credit
11/8/X5	Inventory	213,875	
	Cash		213,875

12.2 Purchase Transaction, Delayed Payment

Example 92
Transaction quantity = 12,500.
Cost per unit = 20 Euros.
Transaction date = 11/8/X5.
Settlement date = 2/8/X6.
Balance sheet date = 3/31/X6.
Spot rate 11/8/X5: 1 Euro = $0.8555.
Spot rate 2/8/X6: 1 Euro = $0.9187.

Record the purchase journal entry.
Record the settlement journal entry.

Solution 92:

1. **Transaction Amount (12.1.17)**
   Transaction Amount = Quantity × Cost Per Unit In Foreign Denomination (12.1.1)
   Transaction Amount = 12,500 × 20 = 250,000

2. **Purchase Dollar Equivalent (12.1.18)**
   Purchase Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Exchange Rate (12.1.11)
   Purchase Dollar Equivalent = 250,000 × 0.8555 = 213,875

3. **Delayed Payment Purchase Transaction (12.2.2)**

		Debit	Credit
XX/XX/XX	Inventory	Purchase Dollar Equivalent (12.1.18)	
	Accounts Payable		Purchase Dollar Equivalent (12.1.18)

		Debit	Credit
11/8/X5	Inventory	213,875	
	Accounts Payable		213,875

4. **Purchase Exchange Gain/(Loss) Amount (12.2.3)**
   Since No Intermediary Balance Sheet Date (12.1.7) then:
   Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Transaction Exchange Rate (12.1.11) – Settlement Exchange Rate (12.1.13)]
   Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.8555 – 0.9187] = -15,800

5. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4)**
   Since Purchase Exchange Gain/(Loss) Amount (12.2.3) < 0 then:

		Debit	Credit
XX/XX/XX	Exchange Losses and Gains	|(12.2.3)|	
	Accounts Payable		|(12.2.3)|

		Debit	Credit
2/08/X6	Exchange Losses and Gains	15,800	
	Accounts Payable		15,800

6. **Settlement Dollar Equivalent (12.2.5)**
   Settlement Dollar Equivalent = Transaction Amount (12.1.17) × Settlement Exchange Rate (12.1.13)
   Settlement Dollar Equivalent = 250,000 × 0.9187 = 229,675

7. **Delayed Payment Settlement Transaction Journal Entry (12.2.6)**

		Debit	Credit
XX/XX/XX	Accounts Payable	Settlement Dollar Equivalent (12.2.5)	
	Cash		Settlement Dollar Equivalent (12.2.5)

		Debit	Credit
2/08/X6	Accounts Payable	229,675	
	Cash		229,675

12.3 Purchase Transaction, Balance Sheet Date

Example 93
Transaction quantity = 12,500.
Cost per unit = 20 Euros.
Transaction date = 11/8/X5.
Balance sheet date = 12/31/X5.
Settlement date = 2/8/X6.
Spot rate 11/8/X5: 1 Euro = $0.8555.
Spot rate 12/31/X5: 1 Euro = $0.9389.
Spot rate 2/8/X6: 1 Euro = $0.9187.

Record the purchase journal entry.
Record the adjusting journal entry.

Record the settlement journal entry.

Solution 93:

1. **Transaction Amount (12.1.17)**
   Transaction Amount = Quantity × Cost Per Unit In Foreign Denomination (12.1.1)
   Transaction Amount = 12,500 × 20 = 250,000

2. **Purchase Dollar Equivalent (12.1.18)**
   Purchase Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Exchange Rate (12.1.11)
   Purchase Dollar Equivalent = 250,000 × 0.8555 = 213,875

3. **Delayed Payment Purchase Transaction (12.2.2)**

		Debit	Credit
XX/XX/XX	Inventory	Purchase Dollar Equivalent (12.1.18)	
	Accounts Payable		Purchase Dollar Equivalent (12.1.18)

		Debit	Credit
11/8/X5	Inventory	213,875	
	Accounts Payable		213,875

4. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 12/31/X5**
   Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Balance Sheet Date then:
   Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Transaction Exchange Rate (12.1.11) – Balance Exchange Rate (12.1.14)]
   Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.8555 – 0.9389] = -20,850

5. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4)**
   Since Purchase Exchange Gain/(Loss) Amount (12.2.3) < 0 then:

		Debit	Credit
XX/XX/XX	Exchange Losses and Gains	|(12.2.3)|	
	Accounts Payable		|(12.2.3)|

		Debit	Credit
12/31/X5	Exchange Losses and Gains	20,850	
	Accounts Payable		20,850

6. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 2/8/X6**
   Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Settlement Date (12.1.6) then:
   Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Balance Exchange Rate (12.1.14) – Settlement Exchange Rate (12.1.13)]
   Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.9389 – 0.9187] = 5,050

7. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4)**
   Since Purchase Exchange Gain/(Loss) Amount (12.2.3) > 0 then:

		Debit	Credit
XX/XX/XX	Accounts Payable	(12.2.3)	
	Exchange Losses and Gains		(12.2.3)

		Debit	Credit
2/08/X6	Accounts Payable	5,050	
	Exchange Losses and Gains		5,050

8. **Settlement Dollar Equivalent (12.2.5)**
   Settlement Dollar Equivalent = Transaction Amount (12.1.17) × Settlement Exchange Rate (12.1.13)
   Settlement Dollar Equivalent = 250,000 × 0.9187 = 229,675

9. **Delayed Payment Settlement Transaction Journal Entry (12.2.6)**

		Debit	Credit
XX/XX/XX	Accounts Payable	Settlement Dollar Equivalent (12.2.5)	
	Cash		Settlement Dollar Equivalent (12.2.5)

		Debit	Credit
2/08/X6	Accounts Payable	229,675	
	Cash		229,675

12.4 Purchase Transaction, Forward Contract

Example 94
Transaction quantity = 12,500.
Cost per unit = 20 Euros.
Transaction date = 11/8/X5.
Balance sheet date = 12/31/X5.
Settlement date = 2/8/X6.
Hedge instrument = Forward contract.

Forward Exchange Rate Table		
Date	Spot Rate	2/8/X6 Forward Rate
Transaction	0.8555	0.8475
Balance Sheet	0.9389	0.9450
Settlement	0.9187	0.9187

Record the purchase journal entry.
Record the adjusting journal entry.
Record the settlement journal entry.

Solution 94:

1. **Transaction Amount (12.1.17)**
   Transaction Amount = Quantity × Cost Per Unit In Foreign Denomination (12.1.1)
   Transaction Amount = 12,500 × 20 = 250,000

2. **Purchase Dollar Equivalent (12.1.18)**
   Purchase Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Exchange Rate (12.1.11)
   Purchase Dollar Equivalent = 250,000 × 0.8555 = 213,875

3. **Delayed Payment Purchase Transaction (12.2.2)**

		Debit	Credit
XX/XX/XX	Inventory	Purchase Dollar Equivalent (12.1.18)	
	Accounts Payable		Purchase Dollar Equivalent (12.1.18)

		Debit	Credit
11/8/X5	Inventory	213,875	
	Accounts Payable		213,875

Ledger

Accounts Payable	
	11/08/X5 213,875
	balance 213,875

4. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 12/31/X5**
   Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Balance Sheet Date then:
   Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Transaction Exchange Rate (12.1.11) – Balance Exchange Rate (12.1.14)]
   Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.8555 – 0.9389] = -20,850

5. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4) 12/31/X5**
   Since Purchase Exchange Gain/(Loss) Amount (12.2.3) < 0 then:

		Debit	Credit
XX/XX/XX	Exchange Losses and Gains	|(12.2.3)|	
	Accounts Payable		|(12.2.3)|

		Debit	Credit
12/31/X5	Exchange Losses and Gains	20,850	
	Accounts Payable		20,850

Ledger

Accounts Payable

	11/08/X5 213,875
	12/31/X5 20,850
	balance 234,725

6. **Forward Gain/(Loss) Amount (12.3.2) 12/31/X5**
Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Balance Sheet Date then:
Forward Gain/(Loss) Amount = Transaction Amount (12.1.17) ×
[Balance Forward Rate (12.1.15) – Transaction Forward Rate (12.1.12)]
Forward Gain/(Loss) Amount = 250,000 × [0.9450 – 0.8475] = 24,375

7. **Forward Gains and Losses Journal Entry (12.3.3) 12/31/X5**
Since Forward Gain/(Loss) Amount (12.3.2) > 0 then:

		Debit	Credit
XX/XX/XX	Foreign Currency Forward Contract (← debit balance, an Asset)	(12.3.2)	
	Forward Contract Losses and Gains		(12.3.2)

		Debit	Credit
12/31/X5	Foreign Currency Forward Contract	24,375	
	Forward Contract Losses and Gains		24,375

Ledger

Foreign Currency Forward Contract

12/31/X5 24,375	
balance 24,375	

8. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 2/8/X6**
Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Settlement Date (12.1.6) then:
Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) ×
[Balance Exchange Rate (12.1.14) – Settlement Exchange Rate (12.1.13)]
Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.9389 – 0.9187] = 5,050

9. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4) 2/8/X6**
Since Purchase Exchange Gain/(Loss) Amount (12.2.3) > 0 then:

		Debit	Credit
XX/XX/XX	Accounts Payable	(12.2.3)	
	Exchange Losses and Gains		(12.2.3)

		Debit	Credit
02/08/X6	Accounts Payable	5,050	
	Exchange Losses and Gains		5,050

Ledger

Accounts Payable

	11/08/X5 213,875
	12/31/X5 20,850
02/08/X6 5,050	
	balance 229,675

10. **Forward Gain/(Loss) Amount (12.3.2) 2/8/X6**
Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Settlement Date (12.1.6) then:
Forward Gain/(Loss) Amount = Transaction Amount (12.1.17) ×
[Settlement Exchange Rate (12.1.13) – Balance Forward Exchange Rate (12.1.15)]
Forward Gain/(Loss) Amount = 250,000 × [0.9187 – 0.9450] = -6,575

11. **Forward Gains and Losses Journal Entry (12.3.3) 2/8/X6**
Since Forward Gain/(Loss) Amount (12.3.2) < 0 then:

		Debit	Credit
XX/XX/XX	Forward Losses and Gains	|(12.3.2)|	
	Foreign Currency Forward Contract (← credit balance, a Liability)		|(12.3.2)|

		Debit	Credit
02/08/X6	Forward Losses and Gains	6,575	
	Foreign Currency Forward Contract		6,575

Ledger

Foreign Currency Forward Contract

12/31/X5 24,375	
	02/08/X8 6,575
balance 17,800	

12. **Forward Settlement Dollar Equivalent (12.3.4)**
Forward Settlement Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Forward Exchange Rate (12.1.12)
Forward Settlement Dollar Equivalent = 250,000 × 0.8475 = 211,875

13. **Forward Settlement Transaction Journal Entry (12.3.5) 2/8/X6**
Since Foreign Currency Forward Contract has a debit balance:

		Debit	Credit
XX/XX/XX	Accounts Payable	Credit Balance	
	Foreign Currency Forward Contract		Debit Balance
	Cash		Forward Settlement Equivalent (12.3.4)

		Debit	Credit
02/08/X6	Accounts Payable	229,675	
	Foreign Currency Forward Contract		17,800
	Cash		211,875

12.5 Purchase Transaction, Option Contract

Example 95
Transaction quantity = 12,500.
Cost per unit = 20 Euros.
Transaction date = 11/8/X5.
Balance sheet date = 12/31/X5.
Settlement date = 2/8/X6.
Transaction date spot rate = 0.8555.
Hedge instrument = Option contract.
Option cost = $5,250.
Option strike price = 0.86.

Option Fair Value Table

Date	Spot Rate	Fair Value
Transaction	0.8555	$5,250
Balance Sheet	0.9389	22,200
Settlement	0.9187	14,675

Record the purchase journal entry.
Record the adjusting journal entry.
Record the settlement journal entry.

Solution 95:

1. **Transaction Amount (12.1.17)**
Transaction Amount = Quantity × Cost Per Unit In Foreign Denomination (12.1.1)
Transaction Amount = 12,500 × 20 = 250,000

2. **Purchase Dollar Equivalent (12.1.18)**
Purchase Dollar Equivalent = Transaction Amount (12.1.17) × Transaction Exchange Rate (12.1.11)
Purchase Dollar Equivalent = 250,000 × 0.8555 = 213,875

3. **Delayed Payment Purchase Transaction (12.2.2)**

		Debit	Credit
XX/XX/XX	Inventory	Purchase Dollar Equivalent (12.1.18)	
	Accounts Payable		Purchase Dollar Equivalent (12.1.18)

		Debit	Credit
11/8/X5	Inventory	213,875	
	Accounts Payable		213,875

Ledger

Accounts Payable

	11/08/X5 213,875
	balance 213,875

4. **Foreign Call Option Purchase Transaction (12.4.1)**

		Debit	Credit
XX/XX/XX	Foreign Currency Option Contract (← an Asset)	Option Contract Fair Value	
	Cash		Fair Value

		Debit	Credit
11/08/X5	Foreign Currency Option Contract	5,250	
	Cash		5,250

Ledger

Foreign Currency Option Contract

11/08/X5 5,250	
balance 5,250	

5. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 12/31/X5**
Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Balance Sheet Date then:
Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Transaction Exchange Rate (12.1.11) – Balance Exchange Rate (12.1.14)]
Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.8555 – 0.9389] = -20,850

6. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4) 12/31/X5**
Since Purchase Exchange Gain/(Loss) Amount (12.2.3) < 0 then:

		Debit	Credit
XX/XX/XX	Exchange Losses and Gains	|(12.2.3)|	
	Accounts Payable		|(12.2.3)|

		Debit	Credit
12/31/X5	Exchange Losses and Gains	20,850	
	Accounts Payable		20,850

Ledger

Accounts Payable

	11/08/X5 213,875
	12/31/X5 20,850
	balance 234,725

7. **Call Option Gain/(Loss) Amount (12.4.2 12/31/X5**
Call Option Gain/(Loss) Amount = Option Contract Fair Value – Foreign Currency Option Contract Debit Balance
Call Option Gain/(Loss) Amount = 22,200 – 5,250 = 16,950

8. **Call Option Gains and Losses Journal Entry (12.4.3) 12/31/X5**
Since Call Option Gain/(Loss) Amount (12.4.2) > 0 then:

		Debit	Credit
XX/XX/XX	Foreign Currency Option Contract (← an Asset)	(12.4.2)	
	Foreign Currency Option Losses and Gains		(12.4.2)

		Debit	Credit
12/31/X5	Foreign Currency Option Contract	16,950	
	Foreign Currency Option Losses and Gains		16,950

Ledger

Foreign Currency Option Contract

11/08/X5 5,250	
12/31/X5 16,950	
balance 22,200	

9. **Purchase Exchange Gain/(Loss) Amount (12.2.3) 2/8/X6**
Since Exists Intermediary Balance Sheet Date (12.1.7) and today is the Settlement Date (12.1.6) then:
Purchase Exchange Gain/(Loss) Amount = Transaction Amount (12.1.17) × [Balance Exchange Rate (12.1.14) – Settlement Exchange Rate (12.1.13)]
Purchase Exchange Gain/(Loss) Amount = 250,000 × [0.9389 – 0.9187] = 5,050

10. **Delayed Payment Exchange Gains and Losses Journal Entry (12.2.4) 2/8/X6**
Since Purchase Exchange Gain/(Loss) Amount (12.2.3) > 0 then:

		Debit	Credit
XX/XX/XX	Accounts Payable	(12.2.3)	
	Exchange Losses and Gains		(12.2.3)

		Debit	Credit
02/08/X6	Accounts Payable	5,050	
	Exchange Losses and Gains		5,050

Ledger

Accounts Payable

	11/08/X5 213,875
	12/31/X5 20,850
02/08/X6 5,050	
	balance 229,675

11. **Call Option Gain/(Loss) Amount (12.4.2) 2/8/X6**
Call Option Gain/(Loss) Amount = Option Contract Fair Value – Foreign Currency Option Contract Debit Balance
Call Option Gain/(Loss) Amount = 14,675 – 22,200 = -7,525

12. **Call Option Gains and Losses Journal Entry (12.4.3) 2/8/X6**
Since Call Option Gain/(Loss) Amount (12.4.2) < 0 then:

		Debit	Credit
XX/XX/XX	Foreign Currency Option Losses and Gains	|(12.4.2)|	
	Foreign Currency Option Contract		|(12.4.2)|

		Debit	Credit
02/08/X6	Foreign Currency Option Losses and Gains	7,252	
	Foreign Currency Option Contract		7,252

Ledger

Foreign Currency Option Contract

11/08/X5 5,250	
12/31/X5 16,950	
	02/08/X6 7,525
balance 14,675	

13. **Settlement Date Call Option Contract Fair Value (12.4.5)**
Settlement Date Call Option Contract Fair Value = Transaction Amount (12.1.17) × [Spot Rate (12.1.8) – Strike Price]
Settlement Date Call Option Contract Fair Value = 250,000 × [0.9187 – 0.86] = 14,675

14. **Call Option Settlement Dollar Equivalent (12.4.4) 2/8/X6**
Since Spot Rate (12.1.8) > Strike Price then:
Call Option Settlement Dollar Equivalent = Transaction Amount (12.1.17) × Strike Price
Call Option Settlement Dollar Equivalent = 250,000 × 0.86 = 215,000

15. **Call Option Settlement Transaction Journal Entry (12.4.6) 2/8/X6**
Since Foreign Currency Option Contract has a Debit Balance then:

		Debit	Credit
XX/XX/XX	Accounts Payable	Credit Balance	
	Foreign Currency Option Contract		Debit Balance (12.4.5)
	Cash		(12.4.4)

		Debit	Credit
02/08/X6	Accounts Payable	229,675	
	Foreign Currency Option Contract		14,675
	Cash		215,000

Chapter 13

Partnerships Examples

13.1 Partnership Formation

Example 96
On January 1, 20X5 Bill and Fred invest the following to begin a partnership.

Account	Bill	Fred
Cash	$25,000	$40,000
Inventory		73,000
Plant Assets	158,000	
Accounts Payable		15,600
Notes Payable	82,700	

Record the formation journal entry.

Solution 96:

1. **Total Investment$_{partner}$ (13.1.3) Bill**
   Let n = the number of assets invested by Bill.
   Total Asset Investment Partner = $\sum_{j=1}^{n}$ Partner$_i$ Asset$_j$ Market Value
   Total Asset Investment Partner = 25,000 + 158,000 = 183,000

   Let n = the number of liabilities invested by Bill.
   Total Liability Investment Partner = $\sum_{k=1}^{n}$ Partner$_i$ Liability$_k$ Market Value
   Total Liability Investment Partner = 82,700

   Total Investment$_{partner}$ = Total Asset Investment Partner –
   Total Liability Investment Partner

   Total Investment Bill = 183,000 – 82,700 = 100,300

2. **Total Investment$_{partner}$ (13.1.3) Fred**
   Let n = the number of assets invested by Fred.
   Total Asset Investment Partner = $\sum_{j=1}^{n}$ Partner$_i$ Asset$_j$ Market Value
   Total Asset Investment Partner = 40,000 + 73,000 = 113,000

   Let n = the number of liabilities invested by Fred.
   Total Liability Investment Partner = $\sum_{k=1}^{n}$ Partner$_i$ Liability$_k$ Market Value
   Total Liability Investment Partner = 15,600

   Total Investment$_{partner}$ = Total Asset Investment Partner –
   Total Liability Investment Partner

   Total Investment Fred = 113,000 – 15,600 = 97,400

3. **Total Investment Asset$_j$ (13.1.4) Cash**
   Let n = the number of Cash Assets invested by all of the partners.
   Total Investment Asset$_j$ = $\sum_{i=1}^{n}$ Partner$_i$ Asset$_j$ Market Value
   Total Investment Cash = 25,000 + 40,000 = 65,000

4. **Total Investment Asset$_j$ (13.1.4) Inventory**
   Let n = the number of Inventory Assets invested by all of the partners.
   Total Investment Asset$_j$ = $\sum_{i=1}^{n}$ Partner$_i$ Asset$_j$ Market Value
   Total Investment Inventory = 73,000

5. **Total Investment Asset$_j$ (13.1.4) Plant Assets**
   Let n = the number of Plant Assets invested by all of the partners.
   Total Investment Asset$_j$ = $\sum_{i=1}^{n}$ Partner$_i$ Asset$_j$ Market Value
   Total Investment Plant Assets = 158,000

6. **Total Investment Liability$_k$ (13.1.5) Accounts Payable**
   Let n = the number of Liability$_k$'s invested by all of the partners.
   Total Investment Liability$_k$ = $\sum_{i=1}^{n}$ Partner$_i$ Liability$_k$ Market Value
   Total Investment Accounts Payable = 15,600

7. **Total Investment Liability$_k$ (13.1.5) Notes Payable**
   Let n = the number of Liability$_k$'s invested by all of the partners.
   Total Investment Liability$_k$ = $\sum_{i=1}^{n}$ Partner$_i$ Liability$_k$ Market Value
   Total Investment Notes Payable = 82,700

8. **Initial Investment Table (13.1.6)**

Account	Bill	Fred	Total
Cash	$25,000	$40,000	65,000
Inventory		73,000	73,000
Plant Assets	158,000		158,000
Accounts Payable		(15,600)	(15,600)
Notes Payable	(82,700)		(82,722)
Total	100,300	97,400	

9. **Partnership Formation Journal Entry (13.1.8)**

		Debit	Credit
XX/XX/XXXX	Asset$_1$	Total Investment Asset$_1$ (13.1.4)	
	...	...	
	Asset$_j$	Total Investment Asset$_j$ (13.1.4)	
	Liability$_1$		Total Investment Liability$_1$ (13.1.5)
	...		...
	Liability$_k$		Total Investment Liability$_k$ (13.1.5)
	Capital$_1$ (13.1.7)		Total Investment Partner$_1$ (13.1.3)
	...		...
	Capital$_p$ (13.1.7)		Total Investment Partner$_p$ (13.1.3)

		Debit	Credit
01/01/20X5	Cash	65,000	
	Inventory	73,000	
	Plant Assets	158,000	
	Accounts Payable		15,600
	Notes Payable		82,700
	Capital, Bill		100,300
	Capital, Fred		97,400

13.2 Weighted Average Capital Balance

Example 97

On January 1, 20X5 Billie and Francis invest the following to begin a partnership.

Account	Billie	Francis
Cash	$100,000	$25,000

During the year, the following investments and drawings took place for Billie.

Date	Transaction	Amount
May 1	Investment	$60,000
November 30	Drawing	24,000

During the year, the following investments and drawings took place for Francis.

Date	Transaction	Amount
August 1	Investment	$30,000
September 30	Drawing	10,000
December 31	Drawing	5,000

Build Billie's and Francis's Weighted-Average Capital for Partner$_p$ Table (13.3.7).

Solution 97:

1. **Weighted-Average Capital for Partner$_p$ Table (13.3.7) Billie**

Invest/Draw Date	Capital Balance (1)	Time Period Percent (2)	Average Capital (1) × (2)
January 1	$100,000	$\frac{4}{12}$	$33,333
May 1	160,000	$\frac{7}{12}$	93,333
November 30	136,000	$\frac{1}{12}$	11,333
			138,000

2. **Weighted-Average Capital for Partner$_p$ Table (13.3.7) Francis**

Invest/Draw Date	Capital Balance (1)	Time Period Percent (2)	Average Capital (1) × (2)
January 1	$25,000	$\frac{7}{12}$	$14,583
August 1	55,000	$\frac{2}{12}$	9,167
September 30	45,000	$\frac{3}{12}$	11,250
December 31	5,000	$\frac{0}{12}$	0
			35,000

13.3 Interest Compensation

Example 98

On December 31, 20X5 Billie and Francis achieve net income of $80,000. The partnership agreement states that the first distribution of net income goes to interest compensation, and it states an interest rate of 10%. Billie's weighted-average capital balance is $138,000. Francis' weighted-average capital balance is $35,000.

Record the interest compensation journal entry.

Solution 98:

1. **Interest Compensation for Partner$_p$ (13.3.10) Billie**
   Since Income Summary (13.3.8) credit balance is sufficiently high then:
   Interest Compensation = Weighted-Average Capital for Partner$_p$ (13.3.6) × Interest Compensation Interest Rate (13.3.9)
   Interest Compensation = 138,000 × 0.10 = 13,800

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Interest Compensation	
	Capital$_{partner}$ (13.1.7)		Interest Compensation

		Debit	Credit
12/31/20X5	Income Summary	13,800	
	Capital, Billie		13,800

2. **Interest Compensation for Partner$_p$ (13.3.10) Francis**
   Since Income Summary (13.3.8) credit balance is sufficiently high then:
   Interest Compensation = Weighted-Average Capital for Partner$_p$ (13.3.6) × Interest Compensation Interest Rate (13.3.9)
   Interest Compensation = 35,000 × 0.10 = 3,500

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Interest Compensation	
	Capital$_{partner}$ (13.1.7)		Interest Compensation

		Debit	Credit
12/31/20X5	Income Summary	3,500	
	Capital, Francis		3,500

13.4 Bonus Compensation

Example 99
On December 31, 20X5 Billie and Francis achieve net income of $200,000. The partnership agreement states that Francis gets a management bonus of 5% of any excess net income over $150,000.

Record the bonus compensation journal entry.

Solution 99:

1. **Bonus Compensation for Partner$_{manager}$ (13.3.11) Francis**
   Bonus Amount = [Net Income (13.3.1) – Net Income Threshold] × Bonus Percent
   Bonus Amount = [200,000 – 150,000] × 0.05 = 2,500
   Since Bonus Amount > 0 then:

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Bonus Amount	
	Capital$_{manager}$ (13.1.7)		Bonus Amount

		Debit	Credit
12/31/20X5	Income Summary	2,500	
	Capital, Francis		2,500

13.5 Salary Compensation

Example 100
On December 31, 20X5 Billie and Francis achieve net income of $80,000. The partnership agreement states that Billie gets an annual salary for services of $10,000 and Francis gets $25,000.

Record the salary compensation journal entry.

Solution 100:

1. **Total Salary Compensation (13.3.12)**
   Let n = the number of partners.
   Total Salary Compensation = $\sum_{i=1}^{n}$ Salary for Partner$_i$
   Total Salary Compensation = 10,000 + 25,000 = 35,000

2. **Full Salary Compensation for Partner$_p$ (13.3.13)**
   Since Income Summary (13.3.8) credit balance >= Total Salary Compensation (13.3.12) then:

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Salary Compensation for Partner$_p$	
	Capital$_{partner}$ (13.1.7)		Salary Compensation

		Debit	Credit
12/31/20X5	Income Summary	10,000	
	Capital, Billie		10,000

		Debit	Credit
12/31/20X5	Income Summary	25,000	
	Capital, Francis		25,000

13.6 Residual Compensation

Example 101
On December 31, 20X5 Billie and Francis achieve net income of $80,000. After distributing interest, salaries, and the bonus, the Income Summary is left with a credit balance of 27,700. Billie has a residual compensation interest rate of 60% and Francis 40%.
Record the residual compensation journal entry.

Solution 101:

1. **Residual Compensation Distribution (13.3.16)**
   Since Income Summary (13.3.8) has a credit balance then:
   Income Summary Credit Balance = Income Summary (13.3.8) credit balance
   For partner Billie:
   Residual Compensation = Income Summary Credit Balance ×
   Residual Compensation Rate for Partner$_p$ (13.3.15)
   Residual Compensation = 27,700 × 0.60 = 16,620

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Residual Compensation	
	Capital$_p$ (13.1.7)		Residual Compensation

		Debit	Credit
12/31/20X5	Income Summary	16,620	
	Capital, Billie		16.620

   For partner Francis:
   Residual Compensation = Income Summary Credit Balance ×
   Residual Compensation Rate for Partner$_p$ (13.3.15)
   Residual Compensation = 27,700 × 0.40 = 11,080

		Debit	Credit
XX/XX/XXXX	Income Summary (13.3.8)	Residual Compensation	
	Capital$_p$ (13.1.7)		Residual Compensation

		Debit	Credit
12/31/20X5	Income Summary	11,080	
	Capital, Francis		11,080

13.7 New Partner, Bonus Method

Example 102
Manuel and Michelle are each 50% partners and have capital balances of $150,000 and $250,000, respectively. On June 1, 20X5 they have agreed to add Richard as a partner. Richard is offered 10% of profits and losses in exchange for $50,000. What are Manuel and Michelle's new profit and loss percent?
Record the new partner journal entry using the bonus method.

Solution 102:

1. **Post-Investment Residual Compensation Rate for Partner$_p$ (13.4.1)**
   For each existing partner p:
   Post-Investment Residual Compensation Rate Partner$_p$ = Current Residual Compensation Rate$_p$ (13.3.15) –
   [Current Residual Compensation Rate$_p$ (13.3.15) ×
   Residual Compensation Rate Partner$_{NewPartner}$ (13.3.15)]
   For existing partner Manuel:
   Post-Investment Residual Compensation Rate for Manuel = 0.50 – (0.50 × 0.10) = 0.45
   For existing partner Michelle:
   Post-Investment Residual Compensation Rate for Michelle = 0.50 – (0.50 × 0.10) = 0.45

2. **Post-Investment Capital Total (13.4.2)**
   Post-Investment Capital Total = $\sum$ Capital$_p$ (13.1.7) Credit Balance +
   New Investment Amount
   Post-Investment Capital Total = 150,000 + 250,000 + 50,000 = 450,000

3. **New Partner Gain/(Loss) (13.4.3)**
   New Partner Gain/(Loss) = New Investment Amount –
   [Post-Investment Capital Total (13.4.2) ×
   Residual Compensation Rate for Partner$_{NewPartner}$ (13.3.15)]
   New Partner Gain/(Loss) = 50,000 – 45,000 = 5,000

4. **Capital, New Partner (13.5.1)**
   Capital$_{NewPartner}$ = Post-Investment Capital Total (13.4.2) ×
   Residual Compensation Rate for Partner$_{NewPartner}$ (13.3.15)
   Capital$_{NewPartner}$ = 450,000 × 0.10 = 45,000

5. **Capital Increase Journal Entry (13.5.2)**
   Since New Partner Gain/(Loss) (13.4.3) > 0 then:
   For each existing partner p:
   Gain Partner$_p$ = Gain/(Loss) (13.4.3) ×
   Residual Compensation Rate for Partner$_p$ (13.3.15)

		Debit	Credit
XX/XX/XXXX	Cash	New Investment Amount	
	Capital$_1$ (13.1.7)		Gain Partner$_1$
	...		...
	Capital$_p$ (13.1.7)		Gain Partner$_p$
	Capital$_{NewPartner}$ (13.1.7)		Capital, New Partner (13.5.1)

   For existing partner Manuel:
   Gain, Manuel = 5,000 × 0.50 = 2,500
   For existing partner Michelle:
   Gain, Michelle = 5,000 × 0.50 = 2,500

		Debit	Credit
06/01/20X5	Cash	50,000	
	Capital, Manuel		2,500
	Capital, Michelle		2,500
	Capital, Richard		45,000

13.8 New Partner, Goodwill Method

Example 103
Ken and Victor are 80% and 20% partners and have capital balances of $220,000 and $300,000, respectively. On June 1, 20X5 they have agreed to add Sam as a partner. Sam is offered 25% of profits and losses in exchange for $180,000.
What are Ken and Victor's new profit and loss percent?
Record the new partner journal entry using the goodwill method.

Solution 103:

1. **Post-Investment Residual Compensation Rate for Partner$_p$ (13.4.1)**
   For each existing partner p:
   Post-Investment Residual Compensation Rate Partner$_p$ = Current Residual Compensation Rate$_p$ (13.3.15) –
   [Current Residual Compensation Rate$_p$ (13.3.15) ×
   Residual Compensation Rate Partner$_{NewPartner}$ (13.3.15)]
   For existing partner Ken:
   Post-Investment Residual Compensation Rate for Ken = 0.80 – (0.80 × 0.25) = 0.60
   For existing partner Victor:
   Post-Investment Residual Compensation Rate for Victor = 0.20 – (0.20 × 0.25) = 0.15

2. **Post-Investment Capital Total (13.4.2)**
   Post-Investment Capital Total = $\sum$ Capital$_p$ (13.1.7) Credit Balance +
   New Investment Amount
   Post-Investment Capital Total = 220,000 + 300,000 + 180,000 = 700,000

3. **New Partner Gain/(Loss) (13.4.3)**
   New Partner Gain/(Loss) = New Investment Amount –
   [Post-Investment Capital Total (13.4.2) ×
   Residual Compensation Rate for Partner$_{NewPartner}$ (13.3.15)]
   New Partner Gain/(Loss) = 180,000 – [700,000 × 0.25] = 5,000

4. **Goodwill Method, Inherent Goodwill, Goodwill Recognized (13.6.4)**
   Since New Partner Gain/(Loss) (13.4.3) > 0 then:
   Goodwill Recognized =
   $$\frac{\text{New Investment Amount} - [\text{Post-Investment Total (13.4.2)} \times \text{Compensation Rate Partner}_{NewPartner} \text{ (13.3.15)}]}{\text{Compensation Rate Partner}_{NewPartner} \text{ (13.3.15)}}$$
   Goodwill Recognized = $\frac{180{,}000 - [700{,}000 \times 0.25]}{0.25} = 20{,}000$

5. **Goodwill Method, Inherent Goodwill, Journal Entry (13.6.5)**
   Since New Partner Gain/(Loss) (13.4.3) > 0 then:

For each existing partner p:

Goodwill Partner$_p$ = Goodwill Recognized (13.6.4) ×
Residual Compensation Rate for Partner$_p$ (13.3.15)

		Debit	Credit
XX/XX/XXXX	Cash	New Investment Amount	
	Goodwill (13.1.7)	Recognized (13.6.4) (13.6.1)	
	Capital$_{NewPartner}$ (13.1.7)		New Investment Amount
	Capital$_1$ (13.1.7)		Goodwill Partner$_1$
	...		...
	Capital$_p$ (13.1.7)		Goodwill Partner$_p$

For existing partner Ken:

Goodwill, Ken = 20,000 × 0.80 = 16,000

For existing partner Victor:

Goodwill, Victor = 20,000 × 0.20 = 4,000

		Debit	Credit
06/01/20X5	Cash	180,000	
	Goodwill	20,000	
	Capital, Sam		180,000
	Capital, Ken		16,000
	Capital, Victor		4,000

Chapter 14

Accounting Changes and Error Correction Examples

14.1 Change from LIFO to FIFO

Example 104, 20X6:
Air Parts Corporation changed from LIFO to FIFO 20X6. Air Parts has paid dividends of $40 million each year since 1999. Its income tax rate is 40 percent. Retained earnings on January 1, 20X4 was $700 million. Here is the relevant income statement history:

	20X6	20X5	20X4	Previous Years
Revenues	$950	900	875	4,500
Cost of goods sold (LIFO)		420	405	2,000
Cost of goods sold (FIFO)	370	365	360	1,700
Operating Expenses	230	210	205	1,000

Show the 20X6 journal entry.
Show the 20X6 Income Statement presentation.
Show the 20X6 Retained Earnings presentation.

Solution 104:

1. **Create the Retained Earnings Ledger Under LIFO**

Retained Earnings

	balance 01/01/X4 700

Net Income 20X4 = Revenues 20X4 – (CGS LIFO 20X4 + Operating 20X4) –
Tax Rate × [Revenues 20X4 – (CGI LIFO 20X4 + Operating 20X4)]
Net Income 20X4 = 875 – (405 + 205) – 0.40 × [875 – (405 + 205)] = 159
Retained Earnings Increase = Net Income 20X4 – Dividends
= 159 – 40 = 119

Retained Earnings

	balance 01/01/X4 700
	12/31/X4 119
	balance 819

Net Income 20X5 = Revenues 20X5 – (CGS LIFO 20X5 + Operating 20X5) –
Tax Rate × [Revenues 20X5 – (CGI LIFO 20X5 + Operating 20X5)]
Net Income 20X5 = 900 – (420 + 210) – 0.40 × [900 – (420 + 210)] = 162
Retained Earnings Increase = Net Income 20X5 – Dividends
= 162 – 40 = 122

Retained Earnings	
	balance 01/01/X4 700
	12/31/X4 119
	12/31/X5 122
	balance 941

2. **New Method Total Pretax Income Prior To Previous Year (14.1.2)**
   New Method Total Pretax Income Prior To Previous Year =
   4,500 – (1,000 + 1,700) +
   875 – (205 + 360) = 2,110

3. **Old Method Total Pretax Income Prior To Previous Year (14.1.3)**
   Old Method Total Pretax Income Prior To Previous Year =
   4,500 – (1,000 + 2,000) +
   875 – (205 + 405) = 1,765

4. **New Method Pretax Income Previous Year (14.1.4)**
   New Method Pretax Income Previous Year =
   900 – (210 + 365) = 325

5. **Old Method Pretax Income Previous Year (14.1.5)**
   Old Method Pretax Income Previous Year =
   900 – (210 + 420) = 270

6. **New Method Pretax Income Current Year (14.1.6)**
   New Method Pretax Income Current Year =
   950 – (230 + 370) = 350

7. **New Method Total Pretax Income At Beginning Current Year (14.1.7)**
   New Method Total Pretax Income At Beginning Current Year =
   New Method Total Pretax Income Prior To Previous Year (14.1.2) +
   New Method Pretax Income Previous Year (14.1.4)
   New Method Total Pretax Income At Beginning Current Year =
   2,110 + 325 = 2,435

8. **Old Method Total Pretax Income At Beginning Current Year (14.1.8)**
   Old Method Total Pretax Income At Beginning Current Year =
   Old Method Total Pretax Income Prior To Previous Year (14.1.3) +
   Old Method Pretax Income Previous Year (14.1.5)
   Old Method Total Pretax Income At Beginning Current Year =
   1,765 + 270 = 2,035

9. **Total Pretax Income Difference (14.1.9)**
   Total Pretax Income Difference =
   New Method Total Pretax Income At Beginning Current Year (14.1.7) –
   Old Method Total Pretax Income At Beginning Current Year (14.1.8)
   Total Pretax Income Difference =
   2,435 – 2,035 = 400

10. **Income Difference Tax Effect (14.1.10)**
    Income Difference Tax Effect =
    Total Pretax Income Difference (14.1.9) ×
    Effective Tax Rate
    Income Difference Tax Effect =
    400 X 0.40 = 160

11. **Income Effect Net Of Tax (14.1.11)**
    Income Effect Net Of Tax =
    Total Pretax Income Difference (14.1.9) –
    Income Difference Tax Effect (14.1.10)
    Income Effect Net Of Tax =
    400 – 160 = 240

Journal Entry, If Inventory Costing and Total Pretax Income Difference > 0

		Debit	Credit
01/01/XX	Inventory	Total Pretax Income Difference (14.1.9)	
	Deferred Tax Liability		Income Difference Tax Effect (14.1.10)
	Retained Earnings		Income Effect Net Of Tax (14.1.11)

		Debit	Credit
01/01/X6	Inventory	400	
	Deferred Tax Liability		160
	Retained Earnings		240

Retained Earnings

	balance 01/01/X4 700
	12/31/X4 119
	12/31/X5 122
	01/01/X6 240
	balance 1,181

12. **Previous Year New Net Income (14.1.12)**

Previous Year New Net Income =
New Method Pretax Income Previous Year (14.1.4) –
[New Method Pretax Income Previous Year (14.1.4) ×
Effective Tax Rate]

Previous Year New Net Income =
325 – [325 × 0.40] = 195

13. **Current Year Net Income (14.1.14)**

Current Year Net Income =
New Method Pretax Income Current Year (14.1.6) –
[New Method Pretax Income Current Year (14.1.6) ×
Effective Tax Rate]

Current Year Net Income =
350 – [350 × .040] = 210

14. **Retrospective Approach: Income Statement Summary Presentation (14.1.16)**

	Current Year	Previous Year
Net Income	Current Year Net Income (14.1.14)	Previous Year New Net Income (14.1.12)
Earnings Per Share	Current Year Earnings Per Share (14.1.15)	Previous Year New Earnings Per Share (14.1.13)

	20X6	20X5
Net Income	210	195

15. **Prior To Previous Year Difference (14.1.17)**

Prior To Previous Year Difference =
New Method Total Pretax Income Prior To Previous Year (14.1.2) –
Old Method Total Pretax Income Prior To Previous Year (14.1.3)

Prior To Previous Year Difference =
2,110 – 1,765 = 345

16. **Prior To Previous Year Difference Tax Effect (14.1.18)**

Prior To Previous Year Difference Tax Effect =
Prior To Previous Year Difference (14.1.17) ×
Effective Tax Rate

Prior To Previous Year Difference Tax Effect =
345 × 0.40 = 138

17. **Prior To Previous Year Difference Net Of Tax (14.1.19)**

Prior To Previous Year Difference Net Of Tax =
Prior To Previous Year Difference (14.1.17) –
Prior To Previous Year Difference Tax Effect (14.1.18)

Prior To Previous Year Difference Net Of Tax =
345 – 138 = 207

18. **Retrospective Approach: Statement of Retained Earnings Presentation (14.1.20)**

Retained Earnings
balance 01/01/X4 700
12/31/X4 119
balance 819

	Current Year	Previous Year
Retained Earnings, Beginning		Retained Earnings Beginning Balance (A)
Cumulative Effect of New Accounting Method		Prior To Previous Year Difference Net Of Tax (14.1.19) (B)
Adjusted Retained Earnings, Beginning	(F)	[(A) – (B)] (C)
Add: Net Income	Current Year Net Income (14.1.14) (G)	Previous Year New Net Income (14.1.12) (D)
Deduct: Dividends	Current Year Dividends (H)	Previous Year Dividends (E)
Retained Earnings, Ending	(F) + (G) – (H)	[(C) + (D) – (E)] (F)

	20X6	20X5
Retained Earnings, Beginning		819
Cumulative Effect of New Accounting Method		207
Adjusted Retained Earnings, Beginning	1,181	1,026
Add: Net Income	210	195
Deduct: Dividends	40	40
Retained Earnings, Ending	1,351	1,181

Retained Earnings
balance 01/01/X4 700
12/31/X4 119
12/31/X5 122
01/01/X6 240
12/31/X6 170 [1]
balance 1,351

14.2 Change from Completed-contract to Percentage-of-completion

Example 105, 20X5:
Principle change = from completed-contract revenue method to percentage-of-completion.
Pretax income from inception to end of 20X4 using completed-contract method = $400,000.
Pretax income from inception to end of 20X4 using percentage-of-completion method = $600,000.
Pretax income in 20X4 using completed-contract method = $160,000.
Pretax income in 20X4 using percentage-of-completion method = $180,000.
Pretax income in 20X5 using percentage-of-completion method = $200,000.
Retained Earnings Beginning Balance 20X4 = 1,600,000.
Shares outstanding = 100,000.
Tax effect = 0.40.
Show the journal entry.
Show the Income Statement presentation.
Show the Retained Earnings presentation.

Solution 105:

1. **New Method Total Pretax Income Prior To Previous Year (14.1.2)**
   New Method Total Pretax Income Prior To Previous Year = $600,000

[1] Net Income 20X6 – Dividends = 210 – 40 = 170

2. **Old Method Total Pretax Income Prior To Previous Year (14.1.3)**
   Old Method Total Pretax Income Prior To Previous Year = $400,000

3. **New Method Pretax Income Previous Year (14.1.4)**
   New Method Pretax Income Previous Year = $180,000

4. **Old Method Pretax Income Previous Year (14.1.5)**
   Old Method Pretax Income Previous Year = $160,000

5. **New Method Pretax Income Current Year (14.1.6)**
   New Method Pretax Income Current Year = $200,000

6. **New Method Total Pretax Income At Beginning Current Year (14.1.7)**
   New Method Total Pretax Income At Beginning Current Year =
   New Method Total Pretax Income Prior To Previous Year (14.1.2) +
   New Method Pretax Income Previous Year (14.1.4)
   New Method Total Pretax Income At Beginning Current Year =
   600,000 + 180,000 = 780,000

7. **Old Method Total Pretax Income At Beginning Current Year (14.1.8)**
   Old Method Total Pretax Income At Beginning Current Year =
   Old Method Total Pretax Income Prior To Previous Year (14.1.3) +
   Old Method Pretax Income Previous Year (14.1.5)
   Old Method Total Pretax Income At Beginning Current Year =
   400,000 + 160,000 = 560,000

8. **Total Pretax Income Difference (14.1.9)**
   Total Pretax Income Difference =
   New Method Total Pretax Income At Beginning Current Year (14.1.7) –
   Old Method Total Pretax Income At Beginning Current Year (14.1.8)
   Total Pretax Income Difference =
   780,000 – 560,000 = 220,000

9. **Income Difference Tax Effect (14.1.10)**
   Income Difference Tax Effect =
   Total Pretax Income Difference (14.1.9) ×
   Effective Tax Rate
   Income Difference Tax Effect =
   220,000 × 0.40 = 88,000

10. **Income Effect Net Of Tax (14.1.11)**
    Income Effect Net Of Tax =
    Total Pretax Income Difference (14.1.9) –
    Income Difference Tax Effect (14.1.10)
    Income Effect Net Of Tax =
    220,000 – 88,000 = 132,000

11. **Journal Entry, If Construction Project and Total Pretax Income Difference > 0**

		Debit	Credit
12/31/XX	Construction in Process	Total Pretax Income Difference (14.1.9)	
	Deferred Tax Liability		Income Difference Tax Effect (14.1.10)
	Retained Earnings		Income Effect Net Of Tax (14.1.11)

		Debit	Credit
01/01/X5	Construction in Process	220,000	
	Deferred Tax Liability		88,000
	Retained Earnings		132,000

12. **Previous Year New Net Income (14.1.12)**
    Previous Year New Net Income =
    New Method Pretax Income Previous Year (14.1.4) –
    [New Method Pretax Income Previous Year (14.1.4) ×
    Effective Tax Rate]

Previous Year New Net Income =
180,000 – [180,000 × 0.40] = 108,000

13. **Previous Year New Earnings Per Share (14.1.13)**
Previous Year New Earnings Per Share =
Previous Year New Net Income (14.1.12) ÷
Shares Outstanding
Previous Year New Earnings Per Share =
108,000 ÷ 100,000 = 1.08

14. **Current Year Net Income (14.1.14)**
Current Year Net Income =
New Method Pretax Income Current Year (14.1.6) –
[New Method Pretax Income Current Year (14.1.6) ×
Effective Tax Rate]
Current Year Net Income =
200,000 – [200,000 × 0.40] = 120,000

15. **Current Year Earnings Per Share (14.1.15)**
Current Year Earnings Per Share =
Current Year Net Income (14.1.14) ÷
Shares Outstanding
Current Year Earnings Per Share =
120,000 ÷ 100,000 = 1.20

16. **Retrospective Approach: Income Statement Summary Presentation (14.1.16)**

	Current Year	Previous Year
Net Income	Current Year Net Income (14.1.14)	Previous Year New Net Income (14.1.12)
Earnings Per Share	Current Year Earnings Per Share (14.1.15)	Previous Year New Earnings Per Share (14.1.13)

	20X5	20X4
Net Income	$120,000	$108,000
Earnings Per Share	$1.20	$1.08

17. **Prior To Previous Year Difference (14.1.17)**
Prior To Previous Year Difference =
New Method Total Pretax Income Prior To Previous Year (14.1.2) –
Old Method Total Pretax Income Prior To Previous Year (14.1.3)
Prior To Previous Year Difference =
600,000 – 400,000 = 200,000

18. **Prior To Previous Year Difference Tax Effect (14.1.18)**
Prior To Previous Year Difference Tax Effect =
Prior To Previous Year Difference (14.1.17) ×
Effective Tax Rate
Prior To Previous Year Difference Tax Effect =
200,000 × 0.40 = 80,000

19. **Prior To Previous Year Difference Net Of Tax (14.1.19)**
Prior To Previous Year Difference Net Of Tax =
Prior To Previous Year Difference (14.1.17) –
Prior To Previous Year Difference Tax Effect (14.1.18)
Prior To Previous Year Difference Net Of Tax =
200,000 – 80,000 = 120,000

20. **Retrospective Approach: Statement of Retained Earnings Presentation (14.1.20)**

	Current Year	Previous Year
Retained Earnings, Beginning		Retained Earnings Beginning Balance (A)
Cumulative Effect of New Accounting Method		Prior To Previous Year Difference Net Of Tax (14.1.19) (B)
Adjusted Retained Earnings, Beginning	(E)	[(A) – (B)] (C)
Add: Net Income	Current Year Net Income (14.1.14) (F)	Previous Year New Net Income (14.1.12) (D)
Retained Earnings, Ending	(E) + (F)	[(C) + (D)] (E)

	20X5	20X4
Retained Earnings, Beginning		1,600,000
Cumulative Effect of New Accounting Method		120,000
Adjusted Retained Earnings, Beginning	1,828,000	1,720,000
Add: Net Income	120,000	108,000
Retained Earnings, Ending	1,948,000	1,828,000

14.3 Expense Omission

Example 106, Error Correction 20X5:
Expense Omission = $20,000 depreciation expense.
Retained Earnings, 1/1/X5 = 350,000
Net Income, 20X5 = 400,000
Tax effect = 0.40.
Show the journal entry.
Show the Retained Earnings Statement.

Solution 106:

1. **Retained Earnings Correction (14.4.2)**
   Retained Earnings Correction =
   Expense Omission × (1 – Effective Tax Rate)
   Retained Earnings Correction =
   20,000 × (1 – 0.40) = 12,000

2. **Deferred Tax Liability Correction (14.4.3)**
   Deferred Tax Liability Correction =
   Expense Omission × Effective Tax Rate
   Deferred Tax Liability Correction =
   20,000 × 0.40 = 8,000

3. **Retained Earnings Journal Entry**

		Debit	Credit
XX/XX/XX	Retained Earnings	Retained Earnings Correction (14.4.2)	
	Deferred Tax Liability	Deferred Tax Liability Correction (14.4.3)	
	Contra-Asset/Liability$_{item}$ (14.4.1)		Expense Omission

		Debit	Credit
XX/XX/X5	Retained Earnings	12,000	
	Deferred Tax Liability	8,000	
	Accumulated Depreciation		20,000

4. **Statement of Retained Earnings Presentation**

Retained Earnings, 1/1/XX		Retained Earnings Beginning Balance (A)
Correction of an Error	Error Correction (1)	
Less: Tax Reduction	Deferred Tax Liability Correction (14.4.3) (2)	[(1) – (2)] (B)
Adjusted Retained Earnings, 1/1/XX		[(A) – (B)] (C)
Add: Net Income		Net Income
Retained Earnings, 12/31/XX		(C) + Net Income

Retained Earnings, 1/1/X5		$350,000
Correction of an Error	$20,000	
Less: Tax Reduction	8,000	(12,000)
Adjusted Retained Earnings, 1/1/X5		338,000
Add: Net Income		400,000
Retained Earnings, 12/31/X5		$738,000

Chapter 15

State and Local General Governmental Fund Examples

15.1 Simple Example

Example 107:

1. On 1/1/X7, the opening entry Cash balance and Fund Balance - Unassigned balance are $20,000.
2. On 1/1/X7, the City Council approved an appropriation to the General Government unit for $10,000.
3. On 1/3/X7, the Mayor submitted a General Government unit purchase order to a vendor to buy equipment for $1,500.
4. On 1/10/X7, the equipment arrived, and the Mayor approved the Invoice which had an amount of $1,500.
5. On 1/12/X7, the payables office paid the invoice to the vendor for $1,500.

Prepare all of the journal entries for these transactions.
Post the journal entries to the general ledger.
Prepard a Trial Balance.

Solution 107:

1. **Opening Entry**

		Debit	Credit
01/01/X7	Cash	20,000	
	Fund Balance - Unassigned (15.2.13)		20,000

Ledger

Cash

Date	Debit	Credit	Balance
01/01/X7	20,000		20,000

Fund Balance - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		20,000	20,000

2. **Appropriation Journal Entry (15.6.3)**

		Debit	Credit
01/01/XX	Fund Balance - Unassigned (15.2.13)	Appropriation	
	$\text{Appropriation}_{OrganizationalUnit\ Constraint}$ (15.6.2)		Appropriation

		Debit	Credit
01/01/X7	Fund Balance - Unassigned	10,000	
	Appropriation General Government - Unassigned		10,000

Ledger

Fund Balance - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		20,000	20,000
01/01/X7	10,000		10,000

Appropriation General Government - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		10,000	10,000

3. **Encumbrance Journal Entry (15.6.11)**

		Debit	Credit
XX/XX/XX	Encumbrance$_{OrganizationalUnit\ Constraint}$ (15.6.9)	Amount	
	Encumbrance Outstanding$_{year}$ (15.6.10)		Amount

		Debit	Credit
01/03/X7	Encumbrance General Government - Unassigned	1,500	
	Encumbrance Outstanding X7		1,500

Ledger

Encumbrance General Government - Unassigned (Contra-equity)

Date	Debit	Credit	Balance
01/03/X7	1,500		-1,500

Encumbrance Outstanding X7 (Equity)

Date	Debit	Credit	Balance
01/03/X7		1,500	1,500

4. **Approve Invoice (15.6.14)**

The output matched the entire obligation and the Invoice Amount matched the Purchase Order Amount.

Reverse Amount (15.6.15)

Reverse Amount = Purchase Order Amount

Reverse Amount = 1,500

Reverse Encumbrance Journal Entry (15.6.16)

		Debit	Credit
XX/XX/XX	Encumbrance Outstanding$_{year}$ (15.6.10)	Reverse (15.6.15)	
	Encumbrance$_{OrganizationalUnit\ Constraint}$ (15.6.9)		Reverse (15.6.15)

		Debit	Credit
01/10/X7	Encumbrance Outstanding X7	1,500	
	Encumbrance General Government - Unassigned		1,500

Ledger

Encumbrance Outstanding X7 (Equity)

Date	Debit	Credit	Balance
01/03/X7		1,500	1,500
01/10/X7	1,500		0

Encumbrance General Government - Unassigned (Contra-equity)

Date	Debit	Credit	Balance
01/03/X7	1,500		-1,500
01/10/X7		1,500	0

Expenditure Amount (15.6.17)

Expenditure Amount = Invoice Amount

Expenditure Amount = 1,500

Expenditure$_{OrganizationalUnit\ Constraint\ year}$ Journal Entry (15.6.19)

Since the invoice is for a current year's purchase order:

		Debit	Credit
XX/XX/XX	Expenditure$_{OrganizationalUnit\ Constraint\ year}$ (15.6.18)	Amount (15.6.17)	
	Vouchers Payable		Amount (15.6.17)

		Debit	Credit
01/10/X7	Expenditure General Government - Unassigned X7	1,500	
	Vouchers Payable		1,500

Ledger

Expenditure General Government - Unassigned X7

Date	Debit	Credit	Balance
01/10/X7	1,500		1,500

Vouchers Payable

Date	Debit	Credit	Balance
01/10/X7		1,500	1,500

5. **Disbursement Journal Entry (15.6.22)**

		Debit	Credit
XX/XX/XX	Vouchers Payable	Expenditure Amount (15.6.17)	
	Cash		Expenditure Amount (15.6.17)

		Debit	Credit
01/12/X7	Vouchers Payable	1,500	
	Cash		1,500

Ledger

Vouchers Payable

Date	Debit	Credit	Balance
01/10/X7		1,500	1,500
01/12/X7	1,500		0

Cash

Date	Debit	Credit	Balance
01/01/X7	20,000		20,000
01/12/X7		1,500	18,500

6. **Trial Balance**

Element	Account	Debit	Credit
Asset	Cash	18,500	
Expenditure	Expenditure General Government - Unassigned X7	1,500	
Equity	Appropriation General Government - Unassigned		10,000
Equity	Fund Balance - Unassigned		10,000
Total		20,000	20,000

15.2 Partial Shipment Example

Example 108:

1. On 1/1/X7, the opening entry Cash balance and Fund Balance - Unassigned balance are $20,000.
2. On 1/1/X7, the City Council approved an appropriation to the General Government unit for $10,000.
3. On 1/3/X7, the Mayor submitted a General Government unit purchase order to a vendor to buy supplies for $1,500.
4. On 1/10/X7, a portion of the supplies arrived. The portion had an invoice amount of $450 when the portion of the purchase order amount was $500. The Mayor approved the invoice amount of $450.
5. On 1/12/X7, the payables office paid the invoice to the vendor for $450.

Prepare all of the journal entries for these transactions.
Post the journal entries to the general ledger.
Prepard a Trial Balance.

Solution 108:

1. **Opening Entry**

		Debit	Credit
01/01/X7	Cash	20,000	
	Fund Balance - Unassigned (15.2.13)		20,000

Ledger

Cash

Date	Debit	Credit	Balance
01/01/X7	20,000		20,000

Fund Balance - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		20,000	20,000

2. **Appropriation Journal Entry (15.6.3)**

		Debit	Credit
01/01/XX	Fund Balance$_{Constraint}$ (15.2.13)	Appropriation	
	Appropriation$_{OrganizationalUnit\ Constraint}$ (15.6.2)		Appropriation

		Debit	Credit
01/01/X7	Fund Balance - Unassigned	10,000	
	Appropriation General Government - Unassigned		10,000

Ledger

Fund Balance - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		20,000	20,000
01/01/X7	10,000		10,000

Appropriation General Government - Unassigned (Equity)

Date	Debit	Credit	Balance
01/01/X7		10,000	10,000

3. **Encumbrance Journal Entry (15.6.11)**

		Debit	Credit
XX/XX/XX	Encumbrance$_{OrganizationalUnit\ Constraint}$ (15.6.9)	Amount	
	Encumbrance Outstanding$_{year}$ (15.6.10)		Amount

		Debit	Credit
01/03/X7	Encumbrance General Government - Unassigned	1,500	
	Encumbrance Outstanding X7		1,500

Ledger

Encumbrance General Government - Unassigned (Contra-equity)

Date	Debit	Credit	Balance
01/03/X7	1,500		-1,500

Encumbrance Outstanding X7 (Equity)

Date	Debit	Credit	Balance
01/03/X7		1,500	1,500

4. **Approve Invoice (15.6.14)**

The output matched a portion of the obligation but the Invoice Amount did not match the portion of the Purchase Order Amount.

Reverse Amount (15.6.15)

Reverse Amount = portion of the Purchase Order Amount

Reverse Amount = 500

Reverse Encumbrance Journal Entry (15.6.16)

		Debit	Credit
XX/XX/XX	Encumbrance Outstanding$_{year}$ (15.6.10)	Reverse (15.6.15)	
	Encumbrance$_{OrganizationalUnit\ Constraint}$ (15.6.9)		Reverse (15.6.15)

		Debit	Credit
01/10/X7	Encumbrance Outstanding X7	500	
	Encumbrance General Government - Unassigned		500

Ledger

Encumbrance Outstanding X7 (Equity)

Date	Debit	Credit	Balance
01/03/X7		1,500	1,500
01/10/X7	500		1,000

Encumbrance General Government - Unassigned (Contra-equity)

Date	Debit	Credit	Balance
01/03/X7	1,500		-1,500
01/10/X7		500	-1,000

Expenditure Amount (15.6.17)

Expenditure Amount = portion of the Invoice Amount

Expenditure Amount = 450

Expenditure$_{OrganizationalUnit\ Constraint\ year}$ Journal Entry (15.6.19)

Since the invoice is for a current year's purchase order:

		Debit	Credit
XX/XX/XX	Expenditure$_{OrganizationalUnit\ Constraint\ year}$ (15.6.18)	Amount (15.6.17)	
	Vouchers Payable		Amount (15.6.17)

		Debit	Credit
01/10/X7	Expenditure General Government - Unassigned X7	450	
	Vouchers Payable		450

Ledger

Expenditure General Government - Unassigned X7

Date	Debit	Credit	Balance
01/10/X7	450		450

Vouchers Payable

Date	Debit	Credit	Balance
01/10/X7		450	450

5. **Disbursement Journal Entry (15.6.22)**

		Debit	Credit
XX/XX/XX	Vouchers Payable	Expenditure Amount (15.6.17)	
	Cash		Expenditure Amount (15.6.17)

		Debit	Credit
01/12/X7	Vouchers Payable	450	
	Cash		450

Ledger

Vouchers Payable

Date	Debit	Credit	Balance
01/10/X7		450	450
01/12/X7	450		0

Cash

Date	Debit	Credit	Balance
01/01/X7	20,000		20,000
01/12/X7		450	19,550

6. **Trial Balance**

Element	Account	Debit	Credit
Asset	Cash	19,550	
Expenditure	Expenditure General Government - Unassigned X7	450	
Equity	Appropriation General Government - Unassigned		10,000
Equity	Encumbrance Outstanding X7		1,000
Equity	Encumbrance General Government - Unassigned		-1,000
Equity	Fund Balance - Unassigned		10,000
Total		20,000	20,000

Chapter 16

Individual Federal Income Taxes Examples

16.1 Tax Return Problem

Example 109
A married couple has the following tax related information:

1. Tax year = 2006
2. Wife's Salary = $60,100
3. Husband's Salary = $54,000
4. Interest income = $2,700
5. Wife's Federal income taxes withheld = $5,990
6. Husband's Federal income taxes withheld = $4,180
7. Wife's state income taxes withheld = $2,940
8. Husband's state income taxes withheld = $2,330
9. Older child's birthdate = 1/25/1982 (← she lives at either home or at college and parents provide over 1/2 support)
10. Younger child's birthdate = 2/7/1986 (← he lives at either home or at college and parents provide over 1/2 support)
11. Older child's earned income = $3,800
12. Younger child's earned income = $3,500
13. Support to husband's widower father = 60%
14. Husband's father died in November 2006
15. Life insurance proceeds = $750,000
16. Personal residence property taxes = $4,870
17. Personal residence interest on mortgage = $8,980
18. Medical insurance premium = $4,240
19. Doctor bill for husband's father paid in 2006 = $7,545
20. Operation for husband = $7,450
21. Prescriptions for husband = $1,075
22. Hospital expenses for husband = $3,350
23. Medical insurance reimbursement = $3,500

24. Additional state income taxes paid = $800
25. Husband's work uniform cost = $447
26. Husband's work uniform laundry charges = $206
27. Wife's annual subscription to a professional journal = $360
28. Donations to local church = $4,900
29. Donations of used clothing to Salvation Army = $350 (← fair value)
30. The couple attended a dinner/dance to support a qualified charitable organization. The tickets cost $300. The cost of comparable entertainment would be $60.
31. **Basic Standard Deduction (16.6.2)**
    For year = 2006:
    If Filing Status (16.13) = Single and Taxpayer does not have a Claimant (16.14.1) then:
    Basic Standard Deduction = 5,150
    If Filing Status (16.13) = Married, Filing Jointly then:
    Basic Standard Deduction = 10,300
    If Filing Status (16.13) = Surviving Spouse then:
    Basic Standard Deduction = 10,300
    If Filing Status (16.13) = Head of Household then:
    Basic Standard Deduction = 7,550
    If Filing Status (16.13) = Married, Filing Separately then:
    Basic Standard Deduction = 5,150
    If Filing Status (16.13) = Single and Taxpayer has a Claimant (16.14.1) then:
    Expanded Earned Income = Earned Income (16.12.6) + 300
    If Expanded Earned Income >= 5,150 then:
    Basic Standard Deduction = 5,150
    If Expanded Earned Income >= 850 then:
    Basic Standard Deduction = Expanded Earned Income
    If Expanded Earned Income < 850 then:
    Basic Standard Deduction = 850
32. **Exemption Amount (16.14)**
    For 2006
    Exemption Amount Per Exemption Count (16.14.2) = 3,300
33. **Individual 2006 Tax Rate Schedule (16.15.11)/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse**

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100		
15,100	61,300	15%	48,050		
61,300	123,700	25%	46,200		
123,700	188,450	28%	64,750		
188,450	336,550	33%	148,100		
336,550	Infinity	35%	Infinity		
					$\sum$ = (16.15.14)

What is the couple's taxes due or (refund)?

Solution 109:

1. **Other Income (16.4.4)**

Other Income =	+ Interest Income	2,700
	+ Prizes	
	+ Embezzled Funds	
	+ Illegal Activity Income	
	+ [Gambling Winnings – Gambling Losses]	
	+ Other Income (vaguely defined)	
	=	2,700

2. **Gross Income (16.4)**

Gross Income =		
	+ Employment Income (16.4.1): Wife	60,100
	+ Employment Income (16.4.1): Husband	54,000
	+ Other Income (16.4.4)	2,700
	=	116,800

3. **Adjusted Gross Income (16.3)**

Adjusted Gross Income = + Gross Income (16.4)
– Adjustments (16.5)
Adjusted Gross Income = 116,800 – 0 = 116,800

4. **Unreimbursed Employee Expenditures (16.10.1)**

Unreimbursed Employee Expenditures =		
	+ Books, journals, and magazines	360
	+ Uniforms not used for normal wear	447
	+ Upkeep of uniforms not used for normal wear	206
	=	1,013

5. **Miscellaneous Itemized Deductions, 2% Floor (16.10)**

Miscellaneous Itemized Deductions Floor = Adjusted Gross Income (16.3) × 0.02
Miscellaneous Itemized Deductions Floor = 116,800 × 0.02 = 2,336

Miscellaneous Itemized Deductions Amount =		
	+ Unreimbursed Employee Expenditures (16.10.1)	1,013
	+ Investment Expenditures (16.10.2)	
	+ Unreimbursed Charity Expenditures (16.10.3)	
	+ Tax Return Preparation Fee	
	=	1,013

Miscellaneous Itemized Deductions = Miscellaneous Itemized Deductions Amount –
Miscellaneous Itemized Deductions Floor
Miscellaneous Itemized Deductions = 1,013 – 2,336 = -1,323
Since Miscellaneous Itemized Deductions < 0 then:
Miscellaneous Itemized Deductions = 0

6. **Total Medical Expenditures (16.7.3)**

Total Medical Expenditures =		
	+ Medical Care: Doctor Visits	7,545
	+ Medical Care: Operations	7,450
	+ Hospital Care	3,350
	+ Prescription Drugs	1,075
	+ Medical Insurance Premiums	4,240
	– Medical Insurance Proceeds	3,500
	=	20,160

7. **Qualified Medical Expenditures (16.7.2)**

Medical Deduction Floor = Adjusted Gross Income (16.3) × 0.075
Medical Deduction Floor = 116,800 × 0.075 = 8,760
Qualified Medical Expenditures = Total Medical Expenditures (16.7.3) –
Medical Deduction Floor
Qualified Medical Expenditures = 20,160 – 8,760 = 11,400

8. **State and Local Individual Ad Valorem Taxes (16.7.5)**

State and Local Individual Ad Valorem Taxes = + $\sum$ Personal Property Ad Valorem Tax
+ $\sum$ Real Estate Ad Valorem Tax
State and Local Individual Ad Valorem Taxes = 4,870

9. **Itemized Personal Expenditures (16.7.1)**

Itemized Personal Expenditures =		
	+ Qualified Medical Expenditures (16.7.2)	11,400
	+ State and Local Income Taxes: Husband	2,330
	+ State and Local Income Taxes: Wife	2,940
	+ State and Local Income Taxes: Additional	800
	+ State and Local Individual Ad Valorem Taxes (16.7.5)	4,870
	+ Home Mortgage Interest, Paid or Accrued	8,980
	=	31,320

10. **Qualified Charity Donations (16.8)**
    Sum of Charity Donations = $\sum$ (Qualified Donation – Fair Value of Consideration Received)
    Sum of Charity Donations = 4,900 + 350 + (300 – 60) = 5,490
    Since Sum of Charity Donations <= 116,800 (16.3) × 0.20 then:
    Qualified Charity Donations = 5,490

11. **Itemized Deductions (16.7)**

Itemized Deductions =	+ Itemized Personal Expenditures (16.7.1)	31,320
	+ Qualified Charity Donations (16.8)	5,490
	+ Miscellaneous Itemized Deductions, 2% Floor (16.10)	0
	+ Other Miscellaneous Itemized Deductions, no 2% Floor (16.11)	
	=	36,810

12. **Basic Standard Deduction (16.6.2)**
    For year = 2006:
    Since Filing Status (16.13) = Married, Filing Jointly then:
    Basic Standard Deduction = 10,300

13. **Standard Deduction (16.6.1)**
    Standard Deduction = Basic Standard Deduction (16.6.2) + Additional Standard Deduction (16.6.4)
    Standard Deduction = 10,300 + 0 = 10,300

14. **Deduction Amount (16.6)**
    If Standard Deduction (16.6.1) >= Itemized Deductions (16.7) then:
    Deduction Amount = Standard Deduction (16.6.1)
    If Itemized Deductions (16.7) > Standard Deduction (16.6.1) then:
    Deduction Amount = Itemized Deductions (16.7)
    Since 36,810 (16.7) > 10,300 (16.6.1) then:
    Deduction Amount = 36,810

15. **Dependency Exemption Decision Tree (16.15.10): Older Child**
    Young Student Test (16.15.7)
    Age Years = Tax Year – Birth Year
    Age Years = 2006 – 1982 = 24
    Since Age Years is not <= 23 then:
    Young Student Test (7) Fails

16. **Exemption Count (16.14.2)**
    Exemption Count = 0
    If Taxpayer has no Claimant (16.14.1) then:
    Exemption Count = Exemption Count + 1
    If Taxpayer has a spouse and Filing Status (16.13) = Married, Filing Jointly then:
    Exemption Count = Exemption Count + 1
    For each Dependent who passes the Dependency Exemption Decision Tree (16.15.10):
    Exemption Count = Exemption Count + 1
    Calculate Exemption Count
    Exemption Count = 4 (← taxpayer, spouse, father, and younger child)

17. **Exemption Amount (16.14)**
    Exemption Amount Per Exemption Count (16.14.2) = 3,300 (for 2006)
    Exemption Amount = Exemption Amount Per Exemption Count × Exemption Count (16.14.2)
    Exemption Amount = 3,300 × 4 = 13,200

18. **Taxable Income (16.1)**

Taxable Income =	+ Adjusted Gross Income (16.3)	116,800
	– Deduction Amount (16.6)	36,810
	– Exemption Amount (16.14)	13,200
	=	66,790

19. **Rounded Taxable Income (16.1.1)**
    Since the last two digits of Taxable Income (16.1) is > 75 and <= 99 then

Rounded Taxable Income = Taxable Income rounded down to 75
Rounded Taxable Income = 66,775

20. **Individual 2006 Tax Rate Schedule (16.15.11)/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse**

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100		
15,100	61,300	15%	46,200		
61,300	123,700	25%	62,400		
123,700	188,450	28%	64,750		
188,450	336,550	33%	148,100		
336,550	Infinity	35%	Infinity		
					$\sum$ = (16.15.14)

21. **Tax on Rounded Taxable Income (16.15.14)**

1 Remaining = Rounded Taxable Income (16.1.1)
2 For L in each layer from top to bottom:
2.1 If Remaining <= Difference_L then:
2.2 Layer Amount_L = Remaining
2.3 Tax Amount_L = Layer Amount_L × Marginal Rate_L
2.4 Remaining = 0
2.5 Goto step 3
2.6 If Remaining > Difference_L then:
2.7 Layer Amount_L = Difference_L
2.8 Tax Amount_L = Layer Amount_L × Marginal Rate_L
2.9 Remaining = Remaining - Difference_L
3 Tax on Rounded Taxable Income = 0
4 For L in each layer from top to bottom:
4.1 Tax on Rounded Taxable Income = Tax on Rounded Taxable Income + Tax Amount_L

(a) 1) Remaining = Rounded Taxable Income (16.1.1)
1) Remaining = 66,775

(b) 2) L = 1

(c) Difference_1 = 15,100

(d) 2.6) Since Remaining > Difference_1 then:

(e) 2.7) Layer Amount_1 = Difference_1

(f)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	

(g) 2.8) Tax Amount_1 = Layer Amount_1 × Marginal Rate_1

(h)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	1,510

(i) 2.9) Remaining = Remaining - Difference_1
2.9) Remaining = 51,675

(j) 2) L = 2

(k) Difference_2 = 46,200

(l) 2.6) Since Remaining > Difference_1 then:

(m) 2.7) Layer Amount_2 = Difference_2

(n)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	
15,100	61,300	15%	46,200	46,200	

(o) 2.8) Tax Amount_2 = Layer Amount_2 × Marginal Rate_2

(p)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	1,510
15,100	61,300	15%	46,200	46,200	6,930

(q) 2.9) Remaining = Remaining - Difference_2
2.9) Remaining = 5,475

(r) 2) L = 3

(s) Difference_3 = 62,400

(t) 2.1) Since Remaining <= Difference_3 then:

(u) 2.2) Layer Amount_3 = Remaining

(v)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	
15,100	61,300	15%	46,200	46,200	
61,300	123,700	25%	62,400	5,475	

(w) 2.3) $\text{Tax Amount}_3 = \text{Layer Amount}_3 \times \text{Marginal Rate}_3$

(x)

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	1,510
15,100	61,300	15%	46,200	46,200	6,930
61,300	123,700	25%	62,400	5,475	1,369

(y) 2.4) Remaining = 0

(z) 4) For L in each layer from top to bottom:
4.1) Tax on Rounded Taxable Income = Tax on Rounded Taxable Income + Tax Amount_L

Individual 2006 Tax Rate Schedule/Filing Status (16.13): Married, Filing Jointly or Surviving Spouse					
Minimum (exclusive)	Maximum (inclusive)	Marginal Rate	Difference	Layer Amount	Tax Amount
0	15,100	10%	15,100	15,100	1,510
15,100	61,300	15%	46,200	46,200	6,930
61,300	123,700	25%	62,400	5,475	1,369
					9,809

22. **Tax Liability Amount (16.2)**

Tax Liability Amount =	+ Tax on Rounded Taxable Income (16.15.14)	9,809
	+ Dividend Tax Liability Amount (16.4.5)	0
	– Tax Credits (16.12)	0
	=	9,809

23. **Taxes Due/(Refund) (16.2.1)**
Employer Withholdings = 5,990 + 4,180 = 10,170

Taxes Due/(Refund) =	+ Tax Liability Amount (16.2)	9,809	
	– Employer Withholdings	10,170	
	– Quarterly Prepayments	0	
	=	-361	(← Refund since negative)

16.2 Child Tax Credit

Example 110: With Phaseout
A married couple has the following Child Tax Credit information:
Dependent child 1 age = 6
Dependent child 2 age = 8
Adjusted Gross Income = $122,400
Filing Status = Married, Filing Jointly
What is the Child Tax Credit?

Solution 110:

1. **Child Tax Credit Qualifying Count (16.12.3)**
   For each Dependent who passes the Dependency Exemption Decision Tree (16.15.10) and
   If Age <= 16 on 12/31 and
   If a U.S. Citizen or Resident:
   Qualifying Count = Qualifying Count + 1
   Qualifying Count = 2

2. **Child Tax Credit Phaseout Amount (16.12.2)**
   Since Filing Status (16.13) = Married, Filing Jointly then:
   AGI Phaseout Floor = 110,000 (for 2007)
   Calculate Phaseout Amount
   Phaseout Numerator = Adjusted Gross Income (16.3) – AGI Phaseout Floor
   Phaseout Numerator = 122,400 – 110,000 = 12,400
   Since Phaseout Numerator > 0 then:
   Child Tax Credit Phaseout Amount = RoundedUp($\frac{\text{Phaseout Numerator}}{1{,}000}$) × 50
   Child Tax Credit Phaseout Amount = RoundedUp($\frac{12{,}400}{1{,}000}$) × 50
   Child Tax Credit Phaseout Amount = RoundedUp(12.4) × 50
   Child Tax Credit Phaseout Amount = 13 × 50 = 650

3. **Child Tax Credit (16.12.1)**
   Credit Per Child = 1,000 (in 2007)
   Child Tax Credit = [Credit Per Child × Child Tax Credit Qualifying Count (16.12.3)] –
   Child Tax Credit Phaseout Amount (16.12.2)
   Child Tax Credit = [1,000 × 2] – 650 = 1,350