CHAPTER 7
INVENTORIES

DISCUSSION QUESTIONS

1. The receiving report should be reconciled to the initial purchase order and the vendor's invoice before inventory purchases are recorded and paid. This procedure will verify that the inventory received matches the type and quantity of inventory ordered. It also verifies that the vendor's invoice is charging the company for the actual quantity of inventory received at the agreed-upon price.

2. A physical inventory should be taken periodically to test the accuracy of the perpetual records. In addition, a physical inventory will identify inventory shortages or shrinkage.

3. No. They are not techniques for determining physical quantities. The terms refer to cost flow assumptions, which affect the determination of the cost prices assigned to items in the inventory.

4. **a.** LIFO   **c.** LIFO
    b. FIFO   **d.** FIFO

5. FIFO.

6. LIFO. In periods of rising prices, the use of LIFO will result in the lowest net income and thus the lowest income tax expense.

7. The merchandise should be valued using the lower of its cost of $1,350 or its market (net realizable) value of $1,295 ($1,475 − $180). Thus, the merchandise should be valued at its market value of $1,295.

8. **a.** Gross profit for the year was understated by $14,750.

    b. Merchandise inventory and owner's equity were understated by $14,750.

9. Bibbins Company. Since the merchandise was shipped FOB shipping point, title passed to Bibbins Company when it was shipped and should be reported in Bibbins Company's financial statements at May 31, the end of the fiscal year.

10. Manufacturer's. The manufacturer retains title until the goods are sold. Thus, any unsold merchandise at the end of the year is part of the manufacturer's (consignor's) inventory, even though the merchandise is in the hands of the retailer (consignee).

PRACTICE EXERCISES

PE 7-1A

	Gross Profit April	Ending Inventory April 30
a. First-in, first-out (FIFO)	$50 ($118 – $68)	$148 ($73 + $75)
b. Last-in, first-out (LIFO)	$43 ($118 – $75)	$141 ($68 + $73)
c. Weighted average cost	$46 ($118 – $72)	$144 ($72 × 2)

PE 7-1B

	Gross Profit June	Ending Inventory June 30
a. First-in, first-out (FIFO)	$60 ($110 – $50)	$130 ($60 + $70)
b. Last-in, first-out (LIFO)	$40 ($110 – $70)	$110 ($50 + $60)
c. Weighted average cost	$50 ($110 – $60)	$120 ($60 × 2)

PE 7-2A

a. Cost of merchandise sold (March 25):

25 units @ $8	$ 200
125 units @ $9	1,125
150	$1,325

b. Inventory, March 31: $315 = 35 units × $9

PE 7-2B

a. Cost of merchandise sold (July 24):

6 units @ $15	$ 90
34 units @ $18	612
40	$702

b. Inventory, July 31: $1,008 = 56 units × $18

PE 7-3A

a. **Cost of merchandise sold (September 27):**

    $12,600 = (70 units × $180)

b. **Inventory, September 30:**

15	units @ $175	$2,625
5	units @ $180	900
20		$3,525

PE 7-3B

a. **Cost of merchandise sold (March 27):**

    $4,800 = (240 units × $20)

b. **Inventory, March 31:**

45	units @ $18	$ 810
135	units @ $20	2,700
180		$3,510

PE 7-4A

a. **Weighted average unit cost: $440**

    Inventory total cost after purchase on July 23:

30	units @ $400	$12,000
120	units @ $450	54,000
150		$66,000

    Weighted average unit cost = $440.00 ($66,000 ÷ 150 units)

b. **Cost of merchandise sold (July 26): $48,400 (110 units × $440.00)**

c. **Inventory, July 31: $17,600 (40 units @ $440.00)**

PE 7-4B

a. **Weighted average unit cost: $9.50**

    Inventory total cost after purchase on October 22:

125	units @ $8	$1,000
375	units @ $10	3,750
500		$4,750

    Weighted average unit cost = $9.50 ($4,750 ÷ 500 units)

b. **Cost of merchandise sold (October 29): $2,660 (280 units × $9.50)**

c. **Inventory, October 31: $2,090 (220 units × $9.50)**

PE 7-5A

a. **First-in, first-out (FIFO) method: $90,720 = 14 units × $6,480**

b. **Last-in, first-out (LIFO) method: $76,800 = [(12 units × $5,400) + (2 units × $6,000)]**

c. **Weighted average cost method: $84,000 (14 units × $6,000), where average cost = $6,000 = $270,000 ÷ 45 units**

PE 7-5B

a. **First-in, first-out (FIFO) method: $20,094 = (40 units × $357) + (17 units × $342)**

b. **Last-in, first-out (LIFO) method: $19,854 = (20 units × $360) + (37 units × $342)**

c. **Weighted average cost method: $19,665 (57 units × $345), where average cost = $345 = $110,400 ÷ 320 units**

PE 7-6A

Commodity	Inventory Quantity	Cost per Unit	Market Value per Unit (Net Realizable Value)	Total		
				Cost	Market	LCM
Raven 10	1,200	$115	$112	$138,000	$134,400	$134,400
Dove 23	6,500	17	22	110,500	143,000	110,500
Total				$248,500	$277,400	$244,900

PE 7-6B

Commodity	Inventory Quantity	Cost per Unit	Market Value per Unit (Net Realizable Value)	Total		
				Cost	Market	LCM
JFW1	6,330	$10	$11	$ 63,300	$ 69,630	$ 63,300
SAW9	1,140	36	34	41,040	38,760	38,760
Total				$104,340	$108,390	$102,060

PE 7-7A

	Amount of Misstatement Overstatement (Understatement)
Balance Sheet:	
Merchandise inventory understated*.....................	$(11,600)
Current assets understated.................................	(11,600)
Total assets understated....................................	(11,600)
Owner's equity understated................................	(11,600)
Income Statement:	
Cost of merchandise sold overstated...................	$ 11,600
Gross profit understated....................................	(11,600)
Net income understated.....................................	(11,600)

  * $378,500 – $366,900 = $11,600

PE 7-7B

	Amount of Misstatement Overstatement (Understatement)
Balance Sheet:	
Merchandise inventory overstated*......................	$ 8,780
Current assets overstated..................................	8,780
Total assets overstated.....................................	8,780
Owner's equity overstated..................................	8,780
Income Statement:	
Cost of merchandise sold understated.................	$(8,780)
Gross profit overstated......................................	8,780
Net income overstated.......................................	8,780

  * $728,660 – $719,880 = $8,780

PE 7-8A

a.

Inventory Turnover	20Y4	20Y3
Cost of merchandise sold	$4,504,500	$3,715,200
Inventories:		
Beginning of year	$788,000	$760,000
End of year	$850,000	$788,000
Average inventory	$819,000	$774,000
	[($788,000 + $850,000) ÷ 2]	[($760,000 + $788,000) ÷ 2]
Inventory turnover	5.5	4.8
	($4,504,500 ÷ $819,000)	($3,715,200 ÷ $774,000)

b.

Days' Sales in Inventory	20Y4	20Y3
Cost of merchandise sold	$4,504,500	$3,715,200
Average daily cost of		
merchandise sold	$12,341.1	$10,178.6
	($4,504,500 ÷ 365 days)	($3,715,200 ÷ 365 days)
Average inventory	$819,000	$774,000
	[($788,000 + $850,000) ÷ 2]	[($760,000 + $788,000) ÷ 2]
Days' sales in inventory	66.4 days	76.0 days
	($819,000 ÷ $12,341.1)	($774,000 ÷ $10,178.6)

c. The increase in the inventory turnover from 4.8 to 5.5 and the decrease in the
days' sales in inventory from 76.0 days to 66.4 days indicate favorable trends
in managing inventory.

PE 7-8B

a.

Inventory Turnover	20Y7	20Y6
Cost of merchandise sold	$3,864,000	$4,001,500
Inventories:		
Beginning of year	$770,000	$740,000
End of year	$840,000	$770,000
Average inventory	$805,000	$755,000
	[($770,000 + $840,000) ÷ 2]	[($740,000 + $770,000) ÷ 2]
Inventory turnover	4.8	5.3
	($3,864,000 ÷ $805,000)	($4,001,500 ÷ $755,000)

b.

Days' Sales in Inventory	20Y7	20Y6
Cost of merchandise sold	$3,864,000	$4,001,500
Average daily cost of		
merchandise sold	$10,586.3	$10,963.0
	($3,864,000 ÷ 365 days)	($4,001,500 ÷ 365 days)
Average inventory	$805,000	$755,000
	[($770,000 + $840,000) ÷ 2]	[($740,000 + $770,000) ÷ 2]
Days' sales in inventory	76.0 days	68.9 days
	($805,000 ÷ $10,586.3)	($755,000 ÷ $10,963.0)

c. The decrease in the inventory turnover from 5.3 to 4.8 and the increase in the days' sales in inventory from 68.9 days to 76.0 days indicate unfavorable trends in managing inventory.

EXERCISES

Ex. 7-1

Switching to a perpetual inventory system will strengthen Triple Creek Hardware's internal controls over inventory because the store managers will be able to keep track of how much of each item is on hand. This should minimize shortages of good-selling items and excess inventories of poor-selling items.

On the other hand, switching to a perpetual inventory system will not eliminate the need to take a physical inventory count. A physical inventory must be taken to verify the accuracy of the inventory records in a perpetual inventory system. In addition, a physical inventory count is needed to detect shortages of inventory due to damage or theft.

Ex. 7-2

a. **Appropriate. The inventory tags will protect the inventory from customer theft.**

b. **Inappropriate. The control of using security measures to protect the inventory is violated if the stockroom is not locked.**

c. **Inappropriate. Good controls include a receiving report, prepared after all inventory items received have been counted and inspected. Inventory purchased should be recorded and paid for only after reconciling the receiving report, the initial purchase order, and the vendor's invoice.**

Ex. 7-3

a.

Portable Game Players

Date	Purchases Quantity	Purchases Unit Cost	Purchases Total Cost	COMS Quantity	COMS Unit Cost	COMS Total Cost	Inventory Quantity	Inventory Unit Cost	Inventory Total Cost
Apr. 1							120	26	3,120
10				90	26	2,340	30	26	780
15	140	28	3,920				30	26	780
							140	28	3,920
20				30	26	780	60	28	1,680
				80	28	2,240			
24				40	28	1,120	20	28	560
30	160	30	4,800				20	28	560
							160	30	4,800
30 Balances						6,480			5,360

b. Because the prices rose from $26 for the April 1 inventory to $30 for the purchase on April 30, we would expect that under last-in, first-out, the inventory would be lower.

Note to Instructors: **Exercise 7-4 shows that the inventory is $5,320 under LIFO.**

Ex. 7-4

Portable Game Players

Date		Purchases			Cost of Merchandise Sold			Inventory		
		Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr.	1							120	26	3,120
	10				90	26	2,340	30	26	780
	15	140	28	3,920				30	26	780
								140	28	3,920
	20				110	28	3,080	30	26	780
								30	28	840
	24				30	28	840	20	26	520
					10	26	260			
	30	160	30	4,800				20	26	520
								160	30	4,800
	30	Balances					6,520			5,320

Ex. 7-5

a.

Prepaid Cell Phones

	Purchases			Cost of Merchandise Sold			Inventory		
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
May 1							1,550	44	68,200
10	720	45	32,400				1,550	44	68,200
							720	45	32,400
12				720	45	32,400	1,070	44	47,080
				480	44	21,120			
14				830	44	36,520	240	44	10,560
20	1,200	48	57,600				240	44	10,560
							1,200	48	57,600
31				1,000	48	48,000	240	44	10,560
							200	48	9,600
31	Balances					138,040			20,160

b.   Because the prices rose from $44 for the May 1 inventory to $48 for the purchase on May 20, we would expect that under first-in, first-out, the inventory would be higher.

Note to Instructors: **Exercise 7-6 shows that the inventory is $21,120 under FIFO.**

Ex. 7-6

Prepaid Cell Phones									
	Purchases			Cost of Merchandise Sold			Inventory		
Date	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
May 1							1,550	44	68,200
10	720	45	32,400				1,550	44	68,200
							720	45	32,400
12				1,200	44	52,800	350	44	15,400
							720	45	32,400
14				350	44	15,400			
				480	45	21,600	240	45	10,800
20	1,200	48	57,600				240	45	10,800
							1,200	48	57,600
31				240	45	10,800			
				760	48	36,480	440	48	21,120
31 Balances						137,080			21,120

Ex. 7-7

a. **$823,680 ($26.40 × 31,200 units)**

b. **$763,200 [($20.00 × 7,200 units) + ($25.20 × 12,000 units) + ($26.40 × 12,000 units)] = $144,000 + $302,400 + $316,800**

Ex. 7-8

Date		Purchases Quantity	Unit Cost	Total Cost	Cost of Merchandise Sold Quantity	Unit Cost	Total Cost	Inventory Quantity	Unit Cost	Total Cost
Jan.	1							30,000	30.00	900,000
Mar.	18				24,000	30.00	720,000	6,000	30.00	180,000
May	2	54,000	31.00	1,674,000				60,000	30.90	1,854,000
Aug.	9				45,000	30.90	1,390,500	15,000	30.90	463,500
Oct.	20	21,000	32.10	674,100				36,000	31.60	1,137,600
Dec.	31	Balances					2,110,500	36,000	31.60	1,137,600

Ex. 7-9

Date		Purchases Quantity	Unit Cost	Total Cost	Cost of Merchandise Sold Quantity	Unit Cost	Total Cost	Inventory Quantity	Unit Cost	Total Cost
Jan.	1							4,000	20.00	80,000
Apr.	19				2,500	20.00	50,000	1,500	20.00	30,000
June	30	6,000	24.00	144,000				7,500	23.20	174,000
Sept.	2				4,500	23.20	104,400	3,000	23.20	69,600
Nov.	15	1,000	25.00	25,000				4,000	23.65	94,600
Dec.	31	Balances					154,400	4,000	23.65	94,600

Ex. 7-10

Date	Purchases Quantity	Purchases Unit Cost	Purchases Total Cost	COMS Quantity	COMS Unit Cost	COMS Total Cost	Inventory Quantity	Inventory Unit Cost	Inventory Total Cost
Jan. 1							4,000	20.00	80,000
Apr. 19				2,500	20.00	50,000	1,500	20.00	30,000
June 30	6,000	24.00	144,000				1,500	20.00	30,000
							6,000	24.00	144,000
Sept. 2				1,500	20.00	30,000	3,000	24.00	72,000
				3,000	24.00	72,000			
Nov. 15	1,000	25.00	25,000				3,000	24.00	72,000
							1,000	25.00	25,000
Dec. 31 Balances						152,000			97,000

Ex. 7-11

Date		Purchases			Cost of Merchandise Sold			Inventory		
		Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Jan.	1							4,000	20.00	80,000
Apr.	19				2,500	20.00	50,000	1,500	20.00	30,000
June	30	6,000	24.00	144,000				1,500	20.00	30,000
								6,000	24.00	144,000
Sept.	2				4,500	24.00	108,000	1,500	20.00	30,000
								1,500	24.00	36,000
Nov.	15	1,000	25.00	25,000				1,500	20.00	30,000
								1,500	24.00	36,000
								1,000	25.00	25,000
Dec.	31	Balances					158,000			91,000

Ex. 7-12

a. $167,700 (1,125 units at $140 plus 75 units at $136) = $157,500 + $10,200

b. $145,600 (1,000 units at $120 plus 200 units at $128) = $120,000 + $25,600

c. $157,800 (1,200 units at $131.50)

Cost of merchandise available for sale:

1,000	units @ $120	$120,000
1,375	units @ $128	176,000
1,500	units @ $136	204,000
1,125	units @ $140	157,500
5,000	units (at an average cost of $131.50)	$657,500

Ex. 7-13

	Inventory Method	Cost	
		Merchandise Inventory	Merchandise Sold
a.	**FIFO**	**$239,840**	**$668,160**
b.	**LIFO**	216,400	691,600
c.	**Weighted average cost**	227,000	681,000

Cost of merchandise available for sale:

1,800	units at $108…………………………………………..…………	$194,400
2,240	units at $110…………………………………………..…………	246,400
2,000	units at $116……………………………………………..………	232,000
1,960	units at $120………………………………………………..……	235,200
8,000	units (at an average cost of $113.50)………………………………	$908,000

a. **First-in, first-out:**

Merchandise inventory:

1,960	units at $120…………………………………………..…………	$235,200
40	units at $116…………………………………………..…………	4,640
2,000	units……………………………………………………..………	$239,840

Merchandise sold:

$908,000 – $239,840……………………………………………..………	$668,160

b. **Last-in, first-out:**

Merchandise inventory:

1,800	units at $108……………………………………………..…………	$194,400
200	units at $110……………………………………………..………	22,000
2,000	units…………………………………………………..…………	$216,400

Merchandise sold:

$908,000 – $216,400……………………………………………..…………	$691,600

c. **Weighted average cost:**

Merchandise inventory:

2,000 units at $113.50 ($908,000 ÷ 8,000 units)………………………………	$227,000

Merchandise sold:

$908,000 – $227,000……………………………………..…………………	$681,000

Ex. 7-14

a.	1.	FIFO inventory	> (greater than)	LIFO inventory
	2.	FIFO cost of merchandise sold	< (less than)	LIFO cost of merchandise sold
	3.	FIFO net income	> (greater than)	LIFO net income
	4.	FIFO income taxes	> (greater than)	LIFO income taxes

b. In periods of rising prices, the income shown on the company's tax return would be lower if LIFO rather than FIFO were used; thus, there is a tax advantage of using LIFO.

Note to Instructors: **The federal tax laws require that if LIFO is used for tax purposes, LIFO must also be used for financial reporting purposes. This is known as the LIFO conformity rule. Thus, selecting LIFO for tax purposes means that the company's reported income will also be lower than if FIFO had been used. Companies using LIFO believe the tax advantages from using LIFO outweigh any negative impact of reporting a lower income to shareholders.**

Ex. 7-15

Inventory Item	Inventory Quantity	Cost per Unit	Market Value per Unit (Net Realizable Value)	Total Cost	Total Market	Total LCM
Birch	100	$125	$120	$12,500	$12,000	$12,000
Cypress	75	100	108	7,500	8,100	7,500
Mountain Ash	80	90	86	7,200	6,880	6,880
Spruce	130	74	80	9,620	10,400	9,620
Willow	60	105	98	6,300	5,880	5,880
Total				$43,120	$43,260	$41,880

Ex. 7-16

The merchandise inventory would appear in the Current assets section, as follows:

    Merchandise inventory—at lower of cost (FIFO) or market…………………   **$41,880**

Alternatively, the details of the method of determining cost and the method of valuation could be presented in a note.

Ex. 7-17

a.

	Balance Sheet	
Merchandise inventory*...	$5,200	understated
Current assets..	$5,200	understated
Total assets...	$5,200	understated
Owner's equity...	$5,200	understated

* $5,200 = $238,600 – $233,400

b.

	Income Statement	
Cost of merchandise sold..	$5,200	overstated
Gross profit..	$5,200	understated
Net income...	$5,200	understated

c.

	Income Statement	
Cost of merchandise sold..	$5,200	understated
Gross profit..	$5,200	overstated
Net income...	$5,200	overstated

d. The December 31, 20Y3, balance sheet would be correct, since the 20Y2 inventory error reverses itself in 20Y3.

Ex. 7-18

a.

	Balance Sheet	
Merchandise inventory*...	$8,650	overstated
Current assets..	$8,650	overstated
Total assets...	$8,650	overstated
Owner's equity...	$8,650	overstated

* $8,650 = $337,500 – $328,850

b.

	Income Statement	
Cost of merchandise sold..	$8,650	understated
Gross profit..	$8,650	overstated
Net income...	$8,650	overstated

c.

	Income Statement	
Cost of merchandise sold..	$8,650	overstated
Gross profit..	$8,650	understated
Net income...	$8,650	understated

d. The December 31, 20Y9, balance sheet would be correct, since the 20Y8 inventory error reverses itself in 20Y9.

Ex. 7-19

When an error is discovered affecting the prior period, it should be corrected. In this case, the merchandise inventory account should be debited and the owner's capital account credited for $42,750.

Failure to correct the error for 20Y4 and purposely misstating the inventory and the cost of merchandise sold in 20Y5 would cause the income statements for the two years not to be comparable. The balance sheet at the end of 20Y5 would be correct, however, because the 20Y4 inventory error reverses itself in 20Y5.

Ex. 7-20

a. **Apple: 62.8 {$140,089 ÷ [($2,349 + $2,111) ÷ 2]}**
    Mattel: 5.0 {$2,896 ÷ [($588 + $562) ÷ 2]}

b. **Lower. Although Mattel's business is seasonal, with most of its revenue generated during the major holidays, much of its nonholiday inventory may turn over very slowly. Apple, on the other hand, turns its inventory over very fast because it maintains a low inventory, which allows it to respond quickly to customer needs. In addition, Apple's computer products can become obsolete quickly, so it cannot risk building large inventories.**

Ex. 7-21

a. **Inventory Turnover** $=\dfrac{\textbf{Cost of Merchandise Sold}}{\textbf{Average Inventory}}$

     Kroger: $\dfrac{\$85,512}{(\$5,688 + \$5,651) \div 2} = 15.08$

     Sprouts: $\dfrac{\$2,541}{(\$165 + \$143) \div 2} = 16.50$

     Whole Foods: $\dfrac{\$9,973}{(\$500 + \$441) \div 2} = 21.20$

b. **Days' Sales in Inventory** $=\dfrac{\textbf{Average Inventory}}{\textbf{Cost of Merchandise Sold} \div 365}$

     Kroger: $\dfrac{(\$5,688 + \$5,651) \div 2}{\$85,512 \div 365} = \dfrac{\$5,669.5}{234.3} = 24.2 \text{ days}$

     Sprouts: $\dfrac{(\$165 + \$143) \div 2}{\$2,541 \div 365} = \dfrac{\$154.0}{7.0} = 22.0 \text{ days}$

     Whole Foods: $\dfrac{(\$500 + \$441) \div 2}{\$9,973 \div 365} = \dfrac{\$470.5}{27.3} = 17.2 \text{ days}$

Alternatively, the day's sales in inventory could be computed by dividing 365 days by the inventory turnover as follows:

     Kroger: **24.2 days (365 ÷ 15.08)**
     Sprouts: **22.1 days (365 ÷ 16.50)**
     Whole Foods: **17.2 days (365 ÷ 21.20)**

c. **The inventory turnover ratios and days' sales in inventory are similar for Kroger and Sprouts. Whole Foods has a higher inventory turnover and a lower days' sales in inventory than Kroger and Sprouts. These results suggest that Kroger and Sprouts are less efficient than Whole Foods in managing inventory.**

d. **If Kroger matched Whole Foods' days' sales in inventory, then its hypothetical ending inventory would be determined as follows:**

     Days' Sales in Inventory $=\dfrac{\textbf{Average Inventory}}{\textbf{Cost of Merchandise Sold} \div 365}$

     $\textbf{17.2 days} = \dfrac{X}{(\$85,512 \div 365)}$

     $X = \textbf{17.2} \times (\$85,512 \div 365) = \textbf{17.2} \times \$234.3$

     $X = \$4,030$

Ex. 7-21 (Concluded)

Thus, the additional cash flow that would have been generated is the difference between the actual average inventory and the hypothetical average inventory, as follows:

Actual average inventory……………………………………	$5,670	million
Hypothetical average inventory……………………………	4,030	million
Positive cash flow potential……………………………	$1,640	million

That is, a lower average inventory amount would have required less cash than actually was required.

Appendix Ex. 7-22

$666,900 ($1,235,000 × 54%)

Appendix Ex. 7-23

$241,804 ($396,400 × 61%)

Appendix Ex. 7-24

$511,500 ($775,000 × 66%)

Appendix Ex. 7-25

	Cost	Retail
Merchandise inventory, June 1	$ 165,000	$ 275,000
Purchases in June (net)	2,361,500	3,800,000
Merchandise available for sale	$2,526,500	$4,075,000
Ratio of cost to retail price: $\dfrac{\$2,526,500}{\$4,075,000} = 62\%$		
Sales for June		3,550,000
Merchandise inventory, June 30, at retail price		$ 525,000
Merchandise inventory, June 30, at estimated cost ($525,000 × 62%)		$ 325,500

Appendix Ex. 7-26

a.	Merchandise inventory, January 1		$ 350,000
	Purchases (net), January 1–December 31		2,950,000
	Merchandise available for sale		$3,300,000
	Sales, January 1–December 31	$4,440,000	
	Less estimated gross profit ($4,440,000 × 35%)	1,554,000	
	Estimated cost of merchandise sold		2,886,000
	Estimated merchandise inventory, December 31		$ 414,000

b.   The gross profit method is useful for estimating inventories for monthly or quarterly financial statements. It is also useful in estimating the cost of merchandise destroyed by fire or other disasters.

7-21

Appendix Ex. 7-27

Merchandise available for sale…………………………………………………	$6,125,000
Less cost of merchandise sold [$9,250,000 × (100% − 36%)]……………	5,920,000
Estimated ending merchandise inventory……………………………………	$ 205,000

Appendix Ex. 7-28

Merchandise available for sale…………………………………………………	$960,000
Less cost of merchandise sold [$1,450,000 × (100% − 42%)]……………	841,000
Estimated ending merchandise inventory……………………………………	$119,000

PROBLEMS

Prob. 7-1A

1.

Date		Purchases Quantity	Purchases Unit Cost	Purchases Total Cost	Cost of Merchandise Sold Quantity	Cost of Merchandise Sold Unit Cost	Cost of Merchandise Sold Total Cost	Inventory Quantity	Inventory Unit Cost	Inventory Total Cost
Jan.	1							7,500	75.00	562,500
	10	22,500	85.00	1,912,500				7,500	75.00	562,500
								22,500	85.00	1,912,500
	28				7,500	75.00	562,500	18,750	85.00	1,593,750
					3,750	85.00	318,750			
	30				3,750	85.00	318,750	15,000	85.00	1,275,000
Feb.	5				1,500	85.00	127,500	13,500	85.00	1,147,500
	10	54,000	87.50	4,725,000				13,500	85.00	1,147,500
								54,000	87.50	4,725,000
	16				13,500	85.00	1,147,500	40,500	87.50	3,543,750
					13,500	87.50	1,181,250			
	28				25,500	87.50	2,231,250	15,000	87.50	1,312,500
Mar.	5	45,000	89.50	4,027,500				15,000	87.50	1,312,500
								45,000	89.50	4,027,500
	14				15,000	87.50	1,312,500	30,000	89.50	2,685,000
					15,000	89.50	1,342,500			
	25	7,500	90.00	675,000				30,000	89.50	2,685,000
								7,500	90.00	675,000
	30				26,250	89.50	2,349,375	3,750	89.50	335,625
								7,500	90.00	675,000
	31	**Balances**					10,891,875			1,010,625

Prob. 7-1A (Concluded)

2.

Accounts Receivable	19,875,000	
Sales		19,875,000*
Cost of Merchandise Sold	10,891,875	
Merchandise Inventory		10,891,875

*$19,875,000 = $1,687,500 + $562,500 + $225,000 + $4,320,000 + $4,080,000 + $4,800,000 + $4,200,000

3. **$8,983,125 ($19,875,000 – $10,891,875)**

4. **$1,010,625 ($335,625 + $675,000)**

5. **Because the prices rose from $75 for the January 1 inventory to $90 for the purchase on March 25, we would expect that under the last-in, first-out method, the inventory would be lower.**

    Note to Instructors: **Problem 7-2A shows that the inventory is $881,250 under LIFO.**

Prob. 7-2A

1.

Date	Purchases Quantity	Purchases Unit Cost	Purchases Total Cost	Cost of Merchandise Sold Quantity	Cost of Merchandise Sold Unit Cost	Cost of Merchandise Sold Total Cost	Inventory Quantity	Inventory Unit Cost	Inventory Total Cost
Jan. 1							7,500	75.00	562,500
10	22,500	85.00	1,912,500				7,500	75.00	562,500
							22,500	85.00	1,912,500
28				11,250	85.00	956,250	7,500	75.00	562,500
							11,250	85.00	956,250
30				3,750	85.00	318,750	7,500	75.00	562,500
							7,500	85.00	637,500
Feb. 5				1,500	85.00	127,500	7,500	75.00	562,500
							6,000	85.00	510,000
10	54,000	87.50	4,725,000				7,500	75.00	562,500
							6,000	85.00	510,000
							54,000	87.50	4,725,000
16				27,000	87.50	2,362,500	7,500	75.00	562,500
							6,000	85.00	510,000
							27,000	87.50	2,362,500
28				25,500	87.50	2,231,250	7,500	75.00	562,500
							6,000	85.00	510,000
							1,500	87.50	131,250
Mar. 5	45,000	89.50	4,027,500				7,500	75.00	562,500
							6,000	85.00	510,000
							1,500	87.50	131,250
							45,000	89.50	4,027,500
14				30,000	89.50	2,685,000	7,500	75.00	562,500
							6,000	85.00	510,000
							1,500	87.50	131,250
							15,000	89.50	1,342,500
25	7,500	90.00	675,000				7,500	75.00	562,500
							6,000	85.00	510,000
							1,500	87.50	131,250
							15,000	89.50	1,342,500
							7,500	90.00	675,000
30				7,500	90.00	675,000	7,500	75.00	562,500
				15,000	89.50	1,342,500	3,750	85.00	318,750
				1,500	87.50	131,250			
				2,250	85.00	191,250			
31	Balances					11,021,250			881,250

Prob. 7-2A (Concluded)

2. **Total sales**…………………………………………………………… $19,875,000*
    Total cost of merchandise sold…………………………………… 11,021,250
    Gross profit………………………………………………………… $ 8,853,750

  * **Total Sales = $19,875,000 = $1,687,500 + $562,500 + $225,000 + $4,320,000 + $4,080,000 +**
                   $4,800,000 + $4,200,000

3.   **$881,250 = [(7,500 units × $75) + (3,750 units × $85)]**
                    = $562,500 + $318,750

Prob. 7-3A

1.

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Jan. 1							7,500	75.00	562,500
10	22,500	85.00	1,912,500				30,000	82.50	2,475,000
28				11,250	82.50	928,125	18,750	82.50	1,546,875
30				3,750	82.50	309,375	15,000	82.50	1,237,500
Feb. 5				1,500	82.50	123,750	13,500	82.50	1,113,750
10	54,000	87.50	4,725,000				67,500	86.50	5,838,750
16				27,000	86.50	2,335,500	40,500	86.50	3,503,250
28				25,500	86.50	2,205,750	15,000	86.50	1,297,500
Mar. 5	45,000	89.50	4,027,500				60,000	88.75	5,325,000
14				30,000	88.75	2,662,500	30,000	88.75	2,662,500
25	7,500	90.00	675,000				37,500	89.00	3,337,500
30				26,250	89.00	2,336,250	11,250	89.00	1,001,250
31 Balances						10,901,250			1,001,250

2.

Total sales..		$19,875,000*
Total cost of merchandise sold..............................		10,901,250
Gross profit...		$ 8,973,750

*Total sales = $1,687,500 + $562,500 + $225,000 + $4,320,000 + $4,080,000 + $4,800,000 + $4,200,000 = $19,875,000

3. $1,001,250 (11,250 × $89.00)

Prob. 7-4A

1.   First-In, First-Out Method

Merchandise inventory, March 31……………………………………	$ 1,010,625
Cost of merchandise sold………………………………..………	10,891,875

Supporting computations

Inventory:

Units in beginning inventory and purchased……………………………	136,500
Units sold……………………………………………………………	125,250
Units in ending inventory………………………………………..	11,250

7,500	units @ $90.00……………………………………………	$ 675,000
3,750	units @ $89.50……………………………………………	335,625
11,250	units……………………………………………..……	$1,010,625

Cost of merchandise sold:

Beginning inventory, January 1……………………………….……	$ 562,500
Purchases……………………………………………………..………	11,340,000*
Merchandise available for sale…………………………………………	$11,902,500
Ending inventory, March 31………………………………………….	1,010,625
Cost of merchandise sold………………………………….……	$10,891,875

  * $1,912,500 + $4,725,000 + $4,027,500 + $675,000

2.   Last-In, First-Out Method

Inventory, March 31…………………………………….……………	$ 881,250
Cost of merchandise sold………………………………………..……	11,021,250

Supporting computations

Inventory:

7,500	units @ $75.00……………………………………………	$562,500
3,750	units @ $85.00……………………………………………	318,750
11,250	units………………………………………………..	$881,250

Cost of merchandise sold:

Beginning inventory, January 1………………………………………	$ 562,500
Purchases……………………………………………………………	11,340,000
Merchandise available for sale…………………………………………	$11,902,500
Ending inventory, March 31……………………………………..……	881,250
Cost of merchandise sold…………………………………………	$11,021,250

Prob. 7-4A (Continued)

3. Weighted Average Cost Method

Inventory, March 31………………………………………	$ 981,000
Cost of merchandise sold………………………………	10,921,500

Supporting computations

$$\text{Weighted Average Unit Cost} = \frac{\text{Total Cost of Merchandise Available for Sale}}{\text{Units Available for Sale}}$$

$$= \frac{\$11,902,500}{136,500 \text{ units}} = \$87.20 \text{ per unit (rounded)}$$

Inventory:

11,250 units × $87.20 = $981,000

Cost of merchandise sold:

Beginning inventory, January 1…………………...…………	$ 562,500
Purchases………………………………………………………	11,340,000
Merchandise available for sale……………………………	$11,902,500
Ending inventory, March 31………………………………	981,000
Cost of merchandise sold………………………………	$10,921,500

Prob. 7-4A (Concluded)

4.

	FIFO	LIFO	Weighted Average
Sales	$19,875,000*	$19,875,000	$19,875,000
Cost of merchandise sold	10,891,875	11,021,250	10,921,500
Gross profit	$ 8,983,125	$ 8,853,750	$ 8,953,500
Inventory, March 31	$ 1,010,625	$ 881,250	$ 981,000

* ($1,687,500 + $562,500 + $225,000 + $4,320,000 + $4,080,000 + $4,800,000 + $4,200,000)

Prob. 7-5A

1.   **First-In, First-Out Method**

Model	Quantity	Unit Cost	Total Cost
A10	4	$ 76	$ 304
	2	70	140
B15	6	184	1,104
	2	170	340
E60	5	70	350
G83	9	259	2,331
J34	15	270	4,050
M90	3	130	390
	2	128	256
Q70	7	180	1,260
	1	175	175
Total			$10,700

2.   **Last-In, First-Out Method**

Model	Quantity	Unit Cost	Total Cost
A10	4	$ 64	$ 256
	2	70	140
B15	8	176	1,408
E60	3	75	225
	2	65	130
G83	7	242	1,694
	2	250	500
J34	12	240	2,880
	3	246	738
M90	2	108	216
	2	110	220
	1	128	128
Q70	5	160	800
	3	170	510
Total			$9,845

Prob. 7-5A (Concluded)

3.   Weighted Average Cost Method

Model	Quantity	Unit Cost*	Total Cost
A10	6	$ 70	$ 420
B15	8	174	1,392
E60	5	69	345
G83	9	253	2,277
J34	15	258	3,870
M90	5	121	605
Q70	8	172	1,376
Total			$10,285

* **Computations of unit costs:**

A10: $70 = [(4 × $64) + (4 × $70) + (4 × $76)] ÷ (4 + 4 + 4)
B15: $174 = [(8 × $176) + (4 × $158) + (3 × $170) + (6 × $184)] ÷ (8 + 4 + 3 + 6)
E60: $69 = [(3 × $75) + (3 × $65) + (15 × $68) + (9 × $70)] ÷ (3 + 3 + 15 + 9)
G83: $253 = [(7 × $242) + (6 × $250) + (5 × $260) + (10 × $259)] ÷ (7 + 6 + 5 + 10)
J34: $258 = [(12 × $240) + (10 × $246) + (16 × $267) + (16 × $270)] ÷ (12 + 10 + 16 + 16)
M90: $121 = [(2 × $108) + (2 × $110) + (3 × $128) + (3 × $130)] ÷ (2 + 2 + 3 + 3)
Q70: $172 = [(5 × $160) + (4 × $170) + (4 × $175) + (7 × $180)] ÷ (5 + 4 + 4 + 7)

4.   a.   During periods of rising prices, the LIFO method will result in a lower cost of inventory, a greater amount of cost of merchandise sold, and less net income than the other two methods. For Dymac Appliances, the LIFO method would be preferred for the current year because it would result in less income tax.

b.   During periods of declining prices, the FIFO method will result in less net income and would be preferred for income tax purposes.

Prob. 7-6A

Inventory Sheet
December 31

Inventory Item	Inventory Quantity		Cost per Unit	Market Value per Unit (Net Realizable Value)	Total		
					Cost	Market	LCM
B12	38	30	$ 60	$ 57	$ 1,800	$ 1,710	
		8	59	57	472	456	
					2,272	2,166	$ 2,166
E41	18		178	180	3,204	3,240	3,204
G19	33	20	128	126	2,560	2,520	
		13	129	126	1,677	1,638	
					4,237	4,158	4,158
L88	18	10	563	550	5,630	5,500	
		8	560	550	4,480	4,400	
					10,110	9,900	9,900
N94	400		8	7	3,200	2,800	2,800
P24	90	80	22	18	1,760	1,440	
		10	21	18	210	180	
					1,970	1,620	1,620
R66	8	5	248	250	1,240	1,250	
		3	260	250	780	750	
					2,020	2,000	2,000
T33	140	100	21	20	2,100	2,000	
		40	19	20	760	800	
					2,860	2,800	2,800
Z16	15	10	750	752	7,500	7,520	
		5	745	752	3,725	3,760	
					11,225	11,280	11,225
Total					$41,098	$39,964	$39,873

Appendix Prob. 7-7A

1.

CELEBRITY TAN CO.		
	Cost	Retail
Merchandise inventory, August 1	$ 300,000	$ 575,000
Net purchases	2,149,000	3,375,000
Merchandise available for sale	$2,449,000	$3,950,000
Ratio of cost to retail price: $\dfrac{\$2,449,000}{\$3,950,000}$ = 62%		
Sales		3,170,000
Merchandise inventory, August 31, at retail		$ 780,000
Merchandise inventory, at estimated cost ($780,000 × 62%)		$ 483,600

2.

RANCHWORKS CO.		
		Cost
a. Merchandise inventory, March 1		$ 880,000
Net purchases		9,500,000
Merchandise available for sale		$10,380,000
Sales	$15,800,000	
Less estimated gross profit ($15,800,000 × 38%)	6,004,000	
Estimated cost of merchandise sold		9,796,000
Estimated merchandise inventory, November 30		$ 584,000
b. Estimated merchandise inventory, November 30		$ 584,000
Physical inventory count, November 30		369,750
Estimated loss due to theft or damage, March 1–November 30		$ 214,250

CHAPTER 7   Inventories

Prob. 7-1B

1.

Date		Purchases			Cost of Merchandise Sold			Inventory		
		Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr.	3							25	1,200	30,000
	8	75	1,240	93,000				25	1,200	30,000
								75	1,240	93,000
	11				25	1,200	30,000	60	1,240	74,400
					15	1,240	18,600			
	30				30	1,240	37,200	30	1,240	37,200
May	8	60	1,260	75,600				30	1,240	37,200
								60	1,260	75,600
	10				30	1,240	37,200	40	1,260	50,400
					20	1,260	25,200			
	19				20	1,260	25,200	20	1,260	25,200
	28	80	1,260	100,800				20	1,260	25,200
								80	1,260	100,800
June	5				20	1,260	25,200	60	1,260	75,600
					20	1,260	25,200			
	16				25	1,260	31,500	35	1,260	44,100
	21	35	1,264	44,240				35	1,260	44,100
								35	1,264	44,240
	28				35	1,260	44,100	26	1,264	32,864
					9	1,264	11,376			
	30	Balances					310,776			32,864

Prob. 7-1B (Concluded)

2.

Accounts Receivable	525,250	
Sales		525,250*
Cost of Merchandise Sold	310,776	
Merchandise Inventory		310,776

*$525,250 = $80,000 + $60,000 + $100,000 + $40,000 + $90,000 + $56,250 + $99,000

3. **$214,474 ($525,250 – $310,776)**

4. **$32,864 (26 units × $1,264)**

5. **Because the prices rose from $1,200 for the April 3 inventory to $1,264 for the purchase on June 21, we would expect that under last-in, first-out, the inventory would be lower.**

    Note to Instructors: **Problem 7-2B shows that the inventory is $31,560 under LIFO.**

Prob. 7-2B

CHAPTER 7   Inventories

1.

Date		Purchases			Cost of Merchandise Sold			Inventory		
		Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr.	3							25	1,200	30,000
	8	75	1,240	93,000				25	1,200	30,000
								75	1,240	93,000
	11				40	1,240	49,600	25	1,200	30,000
								35	1,240	43,400
	30				30	1,240	37,200	25	1,200	30,000
								5	1,240	6,200
May	8	60	1,260	75,600				25	1,200	30,000
								5	1,240	6,200
								60	1,260	75,600
	10				50	1,260	63,000	25	1,200	30,000
								5	1,240	6,200
								10	1,260	12,600
	19				10	1,260	12,600			
					5	1,240	6,200			
					5	1,200	6,000	20	1,200	24,000
	28	80	1,260	100,800				20	1,200	24,000
								80	1,260	100,800
June	5				40	1,260	50,400	20	1,200	24,000
								40	1,260	50,400
	16				25	1,260	31,500	20	1,200	24,000
								15	1,260	18,900
	21	35	1,264	44,240				20	1,200	24,000
								15	1,260	18,900
								35	1,264	44,240
	28				35	1,264	44,240	20	1,200	24,000
					9	1,260	11,340	6	1,260	7,560
	30	Balances					312,080			31,560

Prob. 7-2B (Concluded)

2.	Total sales……………………………………………………………	$525,250*
	Total cost of merchandise sold……………………………………	312,080
	Gross profit……………………………………………………………	$213,170

*$525,250 = $80,000 + $60,000 + $100,000 + $40,000 + $90,000 + $56,250 + $99,000

3. $31,560 = [(20 units × $1,200) + (6 units × $1,260)]
              = $24,000 + $7,560

CHAPTER 7   Inventories

Prob. 7-3B

1.

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr. 3							25	1,200	30,000
8	75	1,240	93,000				100	1,230	123,000
11				40	1,230	49,200	60	1,230	73,800
30				30	1,230	36,900	30	1,230	36,900
May 8	60	1,260	75,600				90	1,250	112,500
10				50	1,250	62,500	40	1,250	50,000
19				20	1,250	25,000	20	1,250	25,000
28	80	1,260	100,800				100	1,258	125,800
June 5				40	1,258	50,320	60	1,258	75,480
16				25	1,258	31,450	35	1,258	44,030
21	35	1,264	44,240				70	1,261	88,270
28				44	1,261	55,484	26	1,261	32,786
30	Balances					310,854			32,786

2.
Total sales..	$525,250*
Total cost of merchandise sold..................	310,854
Gross profit...	$214,396

*$525,250 = $80,000 + $60,000 + $100,000 + $40,000 + $90,000 + $56,250 + $99,000

3. $32,786 (26 units × $1,261)

Prob. 7-4B

1.   First-In, First-Out Method

Merchandise inventory, June 30……………………………….…..	**$ 32,864**
Cost of merchandise sold……………………………….…..………	**310,776**

Supporting computations

Merchandise inventory:

26 units @ $1,264……………………………………..…..……	**$ 32,864**

Cost of merchandise sold:

Beginning inventory, April 1……………………………..…	**$ 30,000**
Purchases………………………………………………..…	**313,640**
Merchandise available for sale………………………….……	**$343,640**
Less ending inventory, June 30………………………………....	**32,864**
Cost of merchandise sold……………………………….……	**$310,776**

2.   Last-In, First-Out Method

Merchandise inventory, June 30…………………………………..	**$ 31,240**
Cost of merchandise sold……………………………….…………	**312,400**

Supporting computations

Merchandise inventory:

25 units @ $1,200……………………………………..………	**$30,000**
1 unit @ $1,240………………………………………………	**1,240**
26 units………………………………………………………	**$31,240**

Cost of merchandise sold:

Beginning inventory, April 1……………………………..…	**$ 30,000**
Purchases……………………………………………….....	**313,640**
Merchandise available for sale………………………….……	**$343,640**
Less ending inventory, June 30……………………………..…	**31,240**
Cost of merchandise sold……………………………….……	**$312,400**

Prob. 7-4B (Continued)

3. **Weighted Average Cost Method**

Merchandise inventory, June 30………………………………	$ 32,500
Cost of merchandise sold…………………………………….	311,140

Supporting computations

$$\text{Weighted Average Unit Cost}\ =\ \frac{\textbf{Total Cost of Merchandise Available for Sale}}{\textbf{Units Available for Sale}}$$

$$=\ \frac{\$343,640}{275\ \text{units}}\ =\ \$1,250\ \text{per unit (rounded)}$$

Merchandise inventory:

26 units × $1,250 = $32,500

Cost of merchandise sold:

Beginning inventory, April 1…………………………………	$ 30,000
Purchases……………………………………………………	313,640
Merchandise available for sale………………………………	$343,640
Less ending inventory, June 30………………………………	32,500
Cost of merchandise sold……………………………………	$311,140

Prob. 7-4B (Concluded)

4.

	FIFO	LIFO	Weighted Average
Sales	$525,250	$525,250	$525,250
Cost of merchandise sold	310,776	312,400	311,140
Gross profit	$214,474	$212,850	$214,110
Inventory, June 30	$ 32,864	$ 31,240	$ 32,500

Prob. 7-5B

1. **First-In, First-Out Method**

Model	Quantity	Unit Cost	Total Cost
C55	3	$1,070	$ 3,210
	1	1,060	1,060
D11	6	675	4,050
	5	666	3,330
F32	1	280	280
	1	260	260
H29	4	317	1,268
K47	6	542	3,252
	2	549	1,098
S33	2	232	464
X74	7	39	273
Total			$18,545

2. **Last-In, First-Out Method**

Model	Quantity	Unit Cost	Total Cost
C55	3	$1,040	$ 3,120
	1	1,054	1,054
D11	9	639	5,751
	2	645	1,290
F32	2	240	480
H29	4	305	1,220
K47	6	520	3,120
	2	531	1,062
S33	2	222	444
X74	4	35	140
	3	36	108
Total			$17,789

Prob. 7-5B (Concluded)

3. **Weighted Average Cost Method**

Model	Quantity	Unit Cost*	Total Cost
C55	4	$1,056	$ 4,224
D11	11	654	7,194
F32	2	252	504
H29	4	311	1,244
K47	8	534	4,272
S33	2	227	454
X74	7	37	259
Total			$18,151

* **Computations of unit costs:**

C55: $1,056 = [(3 × $1,040) + (3 × $1,054) + (3 × $1,060) + (3 × $1,070)] ÷ (3 + 3 + 3 + 3)
D11: $654 = [(9 × $639) + (7 × $645) + (6 × $666) + (6 × $675)] ÷ (9 + 7 + 6 + 6)
F32: $252 = [(5 × $240) + (3 × $260) + (1 × $260) + (1 × $280)] ÷ (5 + 3 + 1 + 1)
H29: $311 = [(6 × $305) + (3 × $310) + (3 × $316) + (4 × $317)] ÷ (6 + 3 + 3 + 4)
K47: $534 = [(6 × $520) + (8 × $531) + (4 × $549) + (6 × $542)] ÷ (6 + 8 + 4 + 6)
S33: $227 = [(4 × $222) + (4 × $232)] ÷ (4 + 4)
X74: $37 = [(4 × $35) + (6 × $36) + (8 × $37) + (7 × $39)] ÷ (4 + 6 + 8 + 7)

4. a. **During periods of rising prices, the LIFO method will result in a lower cost of inventory, a greater amount of cost of merchandise sold, and less net income than the other two methods. For Pappa's Appliances, the LIFO method would be preferred for the current year because it would result in less income tax.**

   b. **During periods of declining prices, the FIFO method will result in less net income and would be preferred for income tax purposes.**

Prob. 7-6B

Inventory Sheet
December 31

Inventory Item	Inventory Quantity		Cost per Unit	Market Value per Unit (Net Realizable Value)	Total		
					Cost	Market	LCM
A54	~~37~~	30	$ 60	$ 56	$ 1,800	$ 1,680	
		7	58	56	406	392	
					2,206	2,072	$ 2,072
C77	24		174	178	4,176	4,272	4,176
F66	~~30~~	20	130	132	2,600	2,640	
		10	128	132	1,280	1,320	
					3,880	3,960	3,880
H83	~~21~~	6	547	545	3,282	3,270	
		15	540	545	8,100	8,175	
					11,382	11,445	11,382
K12	375		6	5	2,250	1,875	1,875
Q58	~~90~~	75	25	18	1,875	1,350	
		15	26	18	390	270	
					2,265	1,620	1,620
S36	~~8~~	5	256	235	1,280	1,175	
		3	260	235	780	705	
					2,060	1,880	1,880
V97	~~140~~	100	17	20	1,700	2,000	
		40	16	20	640	800	
					2,340	2,800	2,340
Y88	~~17~~	10	750	744	7,500	7,440	
		7	740	744	5,180	5,208	
					12,680	12,648	12,648
Total					$43,239	$42,572	$41,873

Appendix Prob. 7-7B

1.

JAFFE CO.		
	Cost	**Retail**
Merchandise inventory, February 1	$ 400,000	$ 615,000
Net purchases	4,055,000	5,325,000
Merchandise available for sale	$4,455,000	$5,940,000
Ratio of cost to retail price: $\dfrac{\$4,455,000}{\$5,940,000}$ = 75%		
Sales		5,100,000
Merchandise inventory, February 28, at retail		$ 840,000
Merchandise inventory, at estimated cost ($840,000 × 75%)		$ 630,000

2.

CORONADO CO.		
		Cost
a. **Merchandise inventory, May 1**		$ 400,000
Net purchases		3,150,000
Merchandise available for sale		$3,550,000
Sales	$4,750,000	
Less estimated gross profit ($4,750,000 × 35%)	1,662,500	
Estimated cost of merchandise sold		3,087,500
Estimated merchandise inventory, October 31		$ 462,500
b. **Estimated merchandise inventory, October 31**		$ 462,500
Physical inventory count, October 31		366,500
Estimated loss due to theft or damage, May 1–October 31		$ 96,000

CASES & PROJECTS

CP 7-1

1. **In the short run, Sizemo Electroniks may benefit slightly from the inflated inventory values and higher earnings. However, at some point in the future, the inventory will be sold at a significantly reduced price or a lower-of-cost-or-market adjustment will be made. Tina benefits from avoiding a possible altercation with the CEO, board members, and stockholders who might be unsettled by a decline in earnings. However, these benefits are only temporary, as the loss will ultimately be recorded in later periods.**

2. **The users of Sizemo's financial statements are harmed by this decision, as it does not result in financial statements that fairly present the company's financial results. Investors may use the information to make investment decisions. Creditors may use the information as a basis for making loans to the company. Both investors and creditors may rely on the inflated values of the 537X semiconductors to predict future earnings, which could expose them to future financial losses.**

3. **No. Tina is acting unethically by instructing Jay to ignore a lower-of-cost-or-market adjustment intentionally. As Jay's supervisor, Tina has a responsibility to ensure her employees behave ethically and apply GAAP correctly. Jay is behaving unethically by knowingly applying GAAP incorrectly. He should have reported the incident to Tina's supervisor.**

CP 7-2

Because the title to merchandise shipped FOB shipping point passes to the buyer when the merchandise is shipped, the shipments made before midnight, October 31, should be recorded properly as sales for the fiscal year ending October 31. Hence, Ryan Frazier is behaving in a professional manner. However, Ryan should realize that recording these sales in the current year precludes them from being recognized as sales in the next year. Thus, accelerating the shipment of orders to increase sales of one period will have the effect of decreasing sales of the next period.

CP 7-3

A sample solution based on Nike Inc.'s Form 10-K for the fiscal year ended May 31, 2015, follows:

1. a. **Inventory costs consist primarily of product cost from the company's suppliers, as well as inbound freight, import duties, taxes, insurance and logistics, and other handling fees.**

    b. **Inventories are stated at lower of cost or market and valued on either an average or specific identification cost basis.**

    c. **$4,337 million (from balance sheet)**

    d. **27.1% ($4,337 ÷ $15,976) in 2015; 28.8% ($3,947 ÷ $13,696) in 2014. Inventory as a percentage of total current assets has decreased slightly.**

    e. **$16,534**

2. **The company's inventory turnover has improved between 2013 and 2014 and again between 2014 and 2015. All of the above measures have improved during this period.**

	2015	2014
Cost of merchandise sold……………………………	$16,534	$ 15,353
Beginning inventory………………………………	3,947	3,484
Ending inventory…………………………………	4,337	3,947
Average inventory……………………………	4,142	3,715.5
Inventory turnover………………………………	4.0	4.1

CP 7-4

Memo

To:	**Ms. Connie Kilmer**
	President, Golden Eagle Company
From:	**A+ Student**
Re:	**Comparison of LIFO and FIFO inventory methods**

LIFO and FIFO are alternative methods of applying unit cost to the units that are sold during the year and those units that remain in ending inventory at the end of the year. The LIFO method is often viewed as the best basis for reflecting income from operations. This is because the LIFO method matches the most current cost of merchandise purchases against current sales. The matching of current costs with current sales results in a gross profit amount that best reflects the results of current operations. For Golden Eagle Company, the gross profit of $3,025,600 reflects the matching of the most current costs of the product of $6,974,400 against the current period sales of $10,000,000. This matching of current costs with current sales also tends to minimize the effects of price trends on the results of operations.

During periods of rising prices, such as for Golden Eagle Company, the LIFO method will also result in less net income than FIFO. Because taxes are levied as a percentage of net income, Golden Eagle Company would pay a lower income tax under the LIFO method.

While the LIFO method is often viewed as the best method for matching revenues and expenses, the FIFO method is often consistent with the physical movement of merchandise in a business, since most businesses tend to dispose of commodities in the order of their acquisition. To the extent that this is the case, the FIFO method approximates the results that will be attained by a specific identification of costs.

The FIFO method also provides the best reflection of the replacement cost of the ending inventory for the balance sheet. This is because the amount reported on the balance sheet for inventory will be assigned costs from the most recent purchases. These costs reflect purchases made near the end of the period. For Golden Eagle Company, the ending inventory on December 31 is assigned costs totaling $1,436,400 under the FIFO method. These costs represent purchases made during the period of August through December. This FIFO inventory amount of $1,436,400 more closely approximates the replacement cost of the ending inventory than the $1,173,600 LIFO amount.

CP 7-4 (Concluded)

Supporting computations:

The cost of ending inventory under the last-in, first-out and first-in, first-out methods is as follows:

Last-in, first-out method:

31,000	units at $36.60……………………………………………	$1,134,600
1,000	units at $39.00………………………………………………	39,000
32,000	units……………………………………………………	$1,173,600

First-in, first-out method:

8,000	units at $48.00………………………………………………	$ 384,000
8,000	units at $44.85………………………………………………	358,800
12,800	units at $43.50………………………………………………	556,800
3,200	units at $42.75………………………………………………	136,800
32,000	units……………………………………………………	$1,436,400

The cost of merchandise sold and gross profit under each method are as follows:

	FIFO	LIFO
Sales…………………………………………………	**$10,000,000**	**$10,000,000**
Cost of merchandise sold (see below)…………………	**6,974,400**	**6,711,600**
Gross profit…………………………………………	**$ 3,025,600**	**$ 3,288,400**
Cost of merchandise sold calculation:		
Cost of merchandise available for sale…………………………	**$8,148,000**	**$8,148,000**
Ending inventory…………………………………………	**1,173,600**	**1,436,400**
Cost of merchandise sold…………………………………	**$6,974,400**	**$6,711,600**

CP 7-5

In developing a response to Paula's concerns, you should probably emphasize the practical need for an assumption concerning the flow of cost of merchandise purchased and sold. That is, when identical goods are frequently purchased, it may not be practical to specifically identify each item of inventory. If all the identical goods were purchased at the same price, it wouldn't make any difference for financial reporting purposes which goods Musick Foods assumed were sold first, second, etc. However, in most cases, goods are purchased over time at different prices, and hence, a need arises to determine which goods are sold so that the price (cost) of those goods can be matched against the revenues to determine operating income.

Next, you should emphasize that accounting principles allow for the fact that the physical flow of the goods may differ from the flow of costs. Specifically, accounting principles allow for three cost flow assumptions: first-in, first-out; last-in, first-out; and weighted average. Each of these methods has advantages and disadvantages. One primary advantage of the last-in, first-out method is that it better matches current costs (the cost of merchandise purchased last) with current revenues. Therefore, the reported operating income is more reflective of current operations and what might be expected in the future. Another reason the last-in, first-out method is often used is that it tends to minimize taxes during periods of price increases. Because for most businesses prices tend to increase, the LIFO method will generate lower taxes than will the alternative cost flow methods.

The preceding explanation should help Paula better understand LIFO and its impact on the financial statements and taxes.

CP 7-6

a. **Target Corp.**

$$\text{Inventory Turnover} = \frac{\text{Cost of Merchandise Sold}}{\text{Average Inventory}}$$

$$= \frac{\$51,997}{(\$8,601 + \$8,282) \div 2} = 6.16$$

Amazon.com

$$\text{Inventory Turnover} = \frac{\text{Cost of Merchandise Sold}}{\text{Average Inventory}}$$

$$= \frac{\$71,651}{(\$10,243 + \$8,299) \div 2} = 7.73$$

b. **Target Corp.**

$$\text{Days' Sales in Inventory} = \frac{\text{Average Inventory}}{\text{Cost of Merchandise Sold} \div 365}$$

$$= \frac{(\$8,601 + \$8,282) \div 2}{\$51,997 \div 365} = 59.3 \text{ days}$$

Amazon.com

$$\text{Days' Sales in Inventory} = \frac{\text{Average Inventory}}{\text{Cost of Merchandise Sold} \div 365}$$

$$= \frac{(\$10,243 + \$8,299) \div 2}{\$71,651 \div 365} = 47.2 \text{ days}$$

Note to Instructors: **Days' sales in inventory could also be computed by dividing 365 days by the inventory turnover as follows:**

Target Corp.   59.3 days (365 days ÷ 6.16)
Amazon.com   47.2 days (365 days ÷ 7.73)

c. **Amazon.com has a smaller investment in inventory for its volume than does Target. Amazon.com's inventory turnover is faster (larger), and the days' sales in inventory is shorter (smaller). This is because Amazon.com uses a different business model than Target does. That is, Amazon.com sells through the Internet, while Target uses the more traditional retail store model, which requires it to stock more inventory.**

CP 7-7

a.

	Costco	Wal-Mart	JCPenney
Cost of merchandise sold........................	$101,065	$365,086	$8,074
Merchandise inventory, beginning...........	$ 8,908	$45,141	$2,721
Merchandise inventory, ending................	8,456	44,858	2,652
Total..	$17,364	$89,999	$5,373
Average merchandise inventory...............	$8,682.0	$44,999.5	$2,686.5
Inventory turnover....................................	11.64	8.11	3.01

b.

	Costco	Wal-Mart	JCPenney
Average merchandise inventory [from part (a)]...	$8,682.0	$44,999.5	$2,686.5
Cost of merchandise sold........................	$101,065	$365,086	$8,074
Average daily cost of merchandise sold....	$276.9	$1,000.2	$22.1
Days' sales in inventory...........................	31.4	45.0	121.6

c. Both the inventory turnover ratio and the days' sales in inventory reflect the merchandising approaches of the three companies.

Costco is a club warehouse. Its approach is to hold only mass appeal items that are sold quickly off the shelf. Most items are sold in bulk quantities at very attractive prices. Costco couples thin margins with very fast inventory turnover.

Wal-Mart has a traditional discounter approach. It has attractive pricing, but the inventory moves slower than would be the case at a club warehouse. For example, many purchases made at Wal-Mart would not be packaged in the same bulk as would be the case at Costco.

JCPenney is a traditional department store with a wider assortment of goods that will not necessarily appeal to the mass market. That is, some of the merchandise items will be more specialized and unique. As such, its inventory moves slower but at a higher price (and margin). JCPenney is having difficulty implementing a competitive strategy against retailers such as Costco and Wal-Mart.