

CHAPTER 8

INVENTORIES

CLASS DISCUSSION QUESTIONS

1. To protect inventory from customer theft, retailers use two-way mirrors, cameras, security guards, locked display cabinets, and inventory tags that set off an alarm if the inventory is removed from the store.
2. Perpetual. The perpetual inventory system provides the more effective means of controlling inventories, since the inventory account is updated for each purchase and sale. This also assists managers in determining when to reorder inventory items.
3. The receiving report should be reconciled to the initial purchase order and the vendor's invoice before recording or paying for inventory purchases. 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.
4. An employee should present a requisition form signed by an authorized manager before receiving inventory items from the company's warehouse.
5. A physical inventory should be taken periodically to test the accuracy of the perpetual records.
6.
 - a. Gross profit for the year was overstated by \$18,500.
 - b. Merchandise inventory and stockholders' equity (retained earnings) were overstated by \$18,500.
7. Fess Company. Since the merchandise was shipped FOB shipping point, title passed to Fess Company when it was shipped and should be reported in Fess Company's financial statements at December 31, the end of the fiscal year.
8. Manufacturer's
9. 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.
10. No, the term refers to the flow of costs rather than the items remaining in the inventory. The inventory cost is composed of the earliest acquisitions costs rather than the most recent acquisitions costs.
11.
 - a. Fifo
 - b. Lifo
 - c. Fifo
 - d. Lifo
12. Fifo
13. Lifo. In periods of rising prices, the use of lifo will result in the lowest net income and thus the lowest income tax expense.
14. Yes. The inventory method may be changed for a valid reason. The effect of any change in method and the reason for the change should be fully disclosed in the financial statements for the period in which the change occurred.
15. Net realizable value (estimated selling price less any direct cost of disposition, such as sales commissions).
16. By a notation next to "merchandise inventory" on the balance sheet or in a footnote to the financial statements.
17. Inventories estimated by the gross profit method are useful in preparing interim statements and in establishing an estimate of the cost of merchandise destroyed by fire or other disasters.

EXERCISES

Ex. 8–1

Switching to a perpetual inventory system will strengthen Onsite Hardware's internal controls over inventory, since 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. 8–2

- a. Inappropriate. Good internal controls include a receiving report, prepared after all inventory items received have been counted and inspected. Inventory purchased should only be recorded and paid for after reconciling the receiving report, the initial purchase order, and the vendor's invoice.
- b. Appropriate. The inventory tags will protect the inventory from customer theft.
- c. Inappropriate. The internal control procedure of using security measures to protect the inventory is violated if the stockroom is not locked.

Ex. 8–3

Include in inventory: c, e, g, i

Exclude from inventory: a, b, d, f, h

Ex. 8–4

a.

	<u>Balance Sheet</u>
Merchandise inventory	\$1,950 understated
Current assets	\$1,950 understated
Total assets	\$1,950 understated
Total stockholders' equity (retained earnings)	\$1,950 understated

b.

	<u>Income Statement</u>
Cost of merchandise sold	\$1,950 overstated
Gross profit	\$1,950 understated
Net income	\$1,950 understated

Ex. 8–5

a.

	<u>Balance Sheet</u>
Merchandise inventory	\$4,150 overstated
Current assets	\$4,150 overstated
Total assets	\$4,150 overstated
Total stockholders' equity (retained earnings)	\$4,150 overstated

b.

	<u>Income Statement</u>
Cost of merchandise sold	\$4,150 understated
Gross profit	\$4,150 overstated
Net income	\$4,150 overstated

Ex. 8–6

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 retained earnings account credited for \$12,800.

Failure to correct the error for 2005 and purposely misstating the inventory and the cost of merchandise sold in 2006 would cause the balance sheets and the income statements for the two years to not be comparable.

Ex. 8-7

Portable CD Players									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
April 1							35	50	1,750
5				26	50	1,300	9	50	450
11	15	53	795				9	50	450
							15	53	795
21				9	50	450	12	53	636
				3	53	159			
28				4	53	212	8	53	424
30	7	54	378				8	53	424
							7	54	378

Total cost of merchandise sold 2,121

Inventory, April 30: \$802 (\$424 + \$378)

Ex. 8–8

Portable CD Players									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
April 1							35	50	1,750
5				26	50	1,300	9	50	450
11	15	53	795				9	50	450
							15	53	795
21				12	53	636	9	50	450
							3	53	159
28				3	53	159	8	50	400
				1	50	50			
30	7	54	378				8	50	400
							7	54	378

Total cost of merchandise sold

2,145

Inventory, April 30: \$778 (\$400 + \$378)

Ex. 8–9

Cell Phones									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Mar. 1							25	90	2,250
5	20	94	1,880				25	90	2,250
							20	94	1,880
9				18	94	1,692	25	90	2,250
							2	94	188
13				2	94	188	7	90	630
				18	90	1,620			
21	15	95	1,425				7	90	630
							15	95	1,425
31				8	95	760	7	90	630
							7	95	665

Total cost of merchandise sold

4,260

Inventory, March 31: \$1,295 (\$630 + \$665)

Ex. 8–10

Cell Phones									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Mar. 1							25	90	2,250
5	20	94	1,880				25	90	2,250
							20	94	1,880
9				18	90	1,620	7	90	630
							20	94	1,880
13				7	90	630			
				13	94	1,222	7	94	658
21	15	95	1,425				7	94	658
							15	95	1,425
31				7	94	658			
				1	95	95	14	95	1,330

Total cost of merchandise sold

4,225

Inventory, March 31: \$1,330

Ex. 8–11

- a. \$700 ($\50×14 units)
- b. \$663 [$(\45×5 units) + $(\$47 \times 4$ units) + $(\$50 \times 5$ units)]

Ex. 8–12

- a. \$360 (8 units at \$33 plus 3 units at \$32)
- b. \$318 (6 units at \$28 plus 5 units at \$30)
- c. \$341 (11 units at \$31; $\$1,240 \div 40$ units = \$31)

Cost of merchandise available for sale:

6 units at \$28	\$ 168
12 units at \$30	360
14 units at \$32	448
<u>8 units at \$33</u>	<u>264</u>
<u>40 units (at average cost of \$31)</u>	<u>\$1,240</u>

Ex. 8–13

Inventory Method	Cost	
	Merchandise Inventory	Merchandise Sold
a. Fifo.....	\$5,016	\$14,484
b. Lifo.....	4,320	15,180
c. Average cost.....	4,680	14,820
Cost of merchandise available for sale:		
42 units at \$120.....		\$ 5,040
58 units at \$130.....		7,540
20 units at \$136.....		2,720
<u>30 units at \$140.....</u>		<u>4,200</u>
<u>150 units (at average cost of \$130).....</u>		<u>\$19,500</u>
a. First-in, first-out:		
Merchandise inventory:		
30 units at \$140.....		\$4,200
<u>6 units at \$136.....</u>		<u>816</u>
36 units.....		<u>\$5,016</u>
Merchandise sold:		
\$19,500 – \$5,016.....		<u>\$14,484</u>
b. Last-in, first-out:		
Merchandise inventory:		
36 units at \$120.....		<u>\$4,320</u>
Merchandise sold:		
\$19,500 – \$4,320.....		<u>\$15,180</u>
c. Average cost:		
Merchandise inventory:		
36 units at \$130 (\$19,500 ÷ 150 units).....		<u>\$4,680</u>
Merchandise sold:		
\$19,500 – \$4,680.....		<u>\$14,820</u>

Ex. 8–14

1.
 - a. LIFO inventory < (less than) FIFO inventory
 - b. LIFO cost of goods sold > (greater than) FIFO cost of goods sold
 - c. LIFO net income < (less than) FIFO net income
 - d. LIFO income tax < (less than) FIFO income tax

2. Under the LIFO conformity rule a company selecting LIFO for tax purposes must also use LIFO for financial reporting purposes. Thus, in periods of rising prices the reported net income would be lower than would be the case under FIFO. However, the lower reported income would also be shown on the corporation's tax return; thus, there is a tax advantage from using LIFO. Firms electing to use LIFO believe the tax advantage from using LIFO outweighs any negative impact from reporting a lower earnings number to shareholders. LIFO is supported because the tax impact is a real cash flow benefit, while a lower LIFO earnings number (compared to FIFO) is merely the result of a reporting assumption.

Ex. 8–15

Commodity	Inventory Quantity	Unit Cost Price	Unit Market Price	Total		Lower of C or M
				Cost	Market	
M76	8	\$150	\$160	\$1,200	\$1,280	\$1,200
T53	20	75	70	1,500	1,400	1,400
A19	10	275	260	2,750	2,600	2,600
J81	15	50	40	750	600	600
K10	25	101	105	2,525	2,625	2,525
Total				<u>\$8,725</u>	<u>\$8,505</u>	<u>\$8,325</u>

Ex. 8–16

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

Merchandise inventory—at lower of cost, FIFO, or market \$8,325

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

Ex. 8–17

\$495,450 (\$825,750 × 60%)

Ex. 8–18

	Cost	Retail
Merchandise inventory, June 1	\$160,000	\$ 180,000
Purchases in June (net)	<u>680,000</u>	<u>1,020,000</u>
Merchandise available for sale	<u>\$840,000</u>	\$1,200,000
 Ratio of cost to retail price:		
.....	$\frac{\$ 840,000}{\$1,200,000} = 70\%$	
 Sales for June (net)		<u>875,000</u>
Merchandise inventory, June 30, at retail price		<u>\$ 325,000</u>
Merchandise inventory, June 30,at estimated cost (\$325,000 × 70%)		<u>\$ 227,500</u>

Ex. 8–19

a. Merchandise inventory, Jan. 1		\$180,000
Purchases (net), Jan. 1–May 17		<u>750,000</u>
Merchandise available for sale		\$930,000
Sales (net), Jan. 1–May 17	\$1,250,000	
Less estimated gross profit (\$1,250,000 × 35%)	<u>437,500</u>	
Estimated cost of merchandise sold		<u>812,500</u>
Estimated merchandise inventory, May 17		<u>\$117,500</u>
 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.		

Ex. 8–20

- a. Apple: 147.8 $\{ \$4,139,000,000 \div [(\$45,000,000 + \$11,000,000) \div 2] \}$
American Greetings: 3.1 $\{ \$881,771,000 \div [(\$278,807,000 + \$290,804,000) \div 2] \}$
- b. Lower. Although American Greetings' business is seasonal in nature, 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. Additionally, Apple's computer products can quickly become obsolete, so it cannot risk building large inventories.

Ex. 8–21

- a. Number of days' sales in inventory = $\frac{\text{Inventory, end of period}}{\text{Cost of goods sold}/365}$

$$\text{Albertson's, } \frac{\$2,973}{\$25,242/365} = 43 \text{ days}$$

$$\text{Kroger, } \frac{\$4,175}{\$37,810/365} = 40 \text{ days}$$

$$\text{Safeway, } \frac{\$2,558}{\$22,303/365} = 42 \text{ days}$$

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Albertson's, } \frac{\$25,242}{(\$2,973 + \$3,196)/2} = 8.2$$

$$\text{Kroger, } \frac{\$37,810}{(\$4,175 + \$4,178)/2} = 9.1$$

$$\text{Safeway, } \frac{\$22,303}{(\$2,558 + \$2,437)/2} = 8.9$$

- b. The number of days' sale in inventory and inventory turnover ratios are consistent. Albertson's has slightly more inventory than does Safeway. Kroger has relatively less inventory (2.3 days) than does Albertson's and Kroger.

Ex. 8–21 Concluded

- c. If Albertson's matched Kroger's days' sales in inventory, then its hypothetical ending inventory would be determined as follows,

$$\text{Number of days' sales in inventory} = \frac{\text{Inventory, end of period}}{\text{Cost of goods sold}/365}$$

$$40 \text{ days} = \frac{X}{\$25,242/365}$$

$$X = 40 \times (\$25,242/365)$$

$$X = \$2,766$$

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

Actual ending inventory.....	\$ 2,973 million
Hypothetical ending inventory	<u>2,766</u>
Positive cash flow potential	\$ 207 million

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

PROBLEMS

Prob. 8–1A

1.

Drift Boats									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Aug. 1							22	2,200	48,400
8	18	2,250	40,500				22	2,200	48,400
							18	2,250	40,500
11				12	2,200	26,400	10	2,200	22,000
							18	2,250	40,500
22				10	2,200	22,000			
				1	2,250	2,250	17	2,250	38,250
Sept. 3	16	2,300	36,800				17	2,250	38,250
							16	2,300	36,800
10				10	2,250	22,500	7	2,250	15,750
							16	2,300	36,800
21				5	2,250	11,250	2	2,250	4,500
							16	2,300	36,800
30	20	2,350	47,000				2	2,250	4,500
							16	2,300	36,800
							20	2,350	47,000

Continued

Prob. 8-1A Concluded

Drift Boats									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Oct. 5				2	2,250	4,500			
				16	2,300	36,800	18	2,350	42,300
				2	2,350	4,700			
13				12	2,350	28,200	6	2,350	14,100
21	30	2,400	72,000				6	2,350	14,100
							30	2,400	72,000
28				6	2,350	14,100			
				9	2,400	21,600	21	2,400	50,400

Total cost of merchandise sold..... \$194,300

2. Accounts Receivable.....	434,400	
Sales		434,400
Cost of Merchandise Sold.....	194,300	
Merchandise Inventory.....		194,300

3. \$240,100 (\$434,400 – \$194,300)

4. \$50,400

Prob. 8-2A

1.

Drift Boats									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Aug. 1							22	2,200	48,400
8	18	2,250	40,500				22	2,200	48,400
							18	2,250	40,500
11				12	2,250	27,000	22	2,200	48,400
							6	2,250	13,500
22				6	2,250	13,500	17	2,200	37,400
				5	2,200	11,000			
Sept. 3	16	2,300	36,800				17	2,200	37,400
							16	2,300	36,800
10				10	2,300	23,000	17	2,200	37,400
							6	2,300	13,800
21				5	2,300	11,500	17	2,200	37,400
							1	2,300	2,300
30	20	2,350	47,000				17	2,200	37,400
							1	2,300	2,300
							20	2,350	47,000

Continued

Prob. 8–3A

1. First-In, First-Out Method

Model	Quantity	Unit Cost	Total Cost
231T	4	\$225	\$ 900
	2	213	426
673W	2	535	1,070
	2	530	1,060
193Q	6	542	3,252
	1	549	549
144Z	6	225	1,350
	5	222	1,110
160M	4	317	1,268
	1	316	316
180X	2	232	464
971K	6	156	936
Total.....			<u>\$12,701</u>

2. Last-In, First-Out Method

Model	Quantity	Unit Cost	Total Cost
231T	3	\$208	\$ 624
	3	212	636
673W	2	520	1,040
	2	527	1,054
193Q	6	520	3,120
	1	531	531
144Z	9	213	1,917
	2	215	430
160M	5	305	1,525
180X	2	222	444
971K	4	140	560
	2	144	288
Total.....			<u>\$12,169</u>

Prob. 8–3A Concluded

3. Average Cost Method

Model	Quantity	Unit Cost	Total Cost
231T	6	\$215*	\$ 1,290
673W	4	528	2,112
193Q	7	534	3,738
144Z	11	218	2,398
160M	5	311	1,555
180X	2	227	454
971K	6	148	888
Total			<u><u>\$12,435</u></u>

* $\$215 = [(3 \times \$208) + (3 \times \$212) + (5 \times \$213) + (4 \times \$225)] \div (3 + 3 + 5 + 4)$

4. a. During periods of rising prices, the lifo method will result in a lesser amount of inventory, a greater amount of the cost of merchandise sold, and a lesser amount of net income than the other two methods. For Henning Appliances, the lifo method would be preferred for the current year, since it would result in a lesser amount of income tax.
- b. During periods of declining prices, the fifo method will result in a lesser amount of net income and would be preferred for income tax purposes.

Prob. 8-4A

Inventory Sheet
December 31, 2006

Description	Inventory Quantity		Unit Cost Price	Unit Market Price	Total		Lower of C or M
					Cost	Market	
A90	35	25 10	\$ 59 58	\$ 57	\$ 1,475 580	\$ 1,425 570	
					2,055	1,995	\$ 1,995
C18		16	188	200	3,008	3,200	3,008
D41	24	16 8	145 142	140	2,320 1,136	2,240 1,120	
					3,456	3,360	3,360
E34		125	25	26	3,125	3,250	3,125
F17	18	6 12	550 540	550	3,300 6,480	3,300 6,600	
					9,780	9,900	9,780
G68		60	14	15	840	900	840
K41		5	400	390	2,000	1,950	1,950
Q79		375	6	6	2,250	2,250	2,250
R72		100 70 30	18 16	17	1,260 480	1,190 510	
					1,740	1,700	1,700
S60	6	5 1	250 260	235	1,250 260	1,175 235	
					1,510	1,410	1,410
W21	140	120 20	20 17	18	2,400 340	2,160 360	
					2,740	2,520	2,520
Z35	9	8 1	701 699	700	5,608 699	5,600 700	
					6,307	6,300	6,300
							<u>\$38,238</u>

Prob. 8–5A

1.

BOZEMAN CO.

	<u>Cost</u>	<u>Retail</u>
Merchandise inventory, February 1	\$ 210,000	\$ 300,000
Net purchases	<u>1,135,500</u>	<u>1,650,000</u>
Merchandise available for sale	<u>\$ 1,345,500</u>	\$ 1,950,000

Ratio of cost to retail price:

$$\frac{\$1,345,500}{\$1,950,000} = 69\%$$

Sales	\$ 1,800,000	
Less sales returns and allowances	<u>40,000</u>	
Net sales		<u>1,760,000</u>
Merchandise inventory, February 28, at retail		<u>\$ 190,000</u>
Merchandise inventory, at estimated cost (\$190,000 × 69%)		<u>\$ 131,100</u>

2. a.

GALLATIN CO.

Merchandise inventory, March 1		\$ 250,000
Net purchases		<u>1,385,000</u>
Merchandise available for sale		\$ 1,635,000
Sales	\$ 2,510,000	
Less sales returns and allowances	<u>110,000</u>	
Net sales	\$ 2,400,000	
Less estimated gross profit (\$2,400,000 × 36%)..	<u>864,000</u>	
Estimated cost of merchandise sold		<u>1,536,000</u>
Estimated merchandise inventory, April 30		<u>\$ 99,000</u>

b.

Estimated merchandise inventory, April 30		\$ 99,000
Physical inventory count, April 30		<u>88,125</u>
Estimated loss due to theft or damage, March 1– April 30		<u>\$ 10,875</u>

Prob. 8-1B

1.

Floor Mats									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr. 1							200	2.10	420
8	800	2.20	1,760				200	2.10	420
							800	2.20	1,760
20				200	2.10	420			
				150	2.20	330	650	2.20	1,430
30				450	2.20	990	200	2.20	440
May 8				50	2.20	110	150	2.20	330
10	500	2.30	1,150				150	2.20	330
							500	2.30	1,150
27				150	2.20	330			
				200	2.30	460	300	2.30	690
31				200	2.30	460	100	2.30	230
June 5	750	2.40	1,800				100	2.30	230
							750	2.40	1,800
13				100	2.30	230			
				250	2.40	600	500	2.40	1,200
23	400	2.60	1,040				500	2.40	1,200
							400	2.60	1,040
30				500	2.40	1,200	400	2.60	1,040

Total cost of merchandise sold 5,130

Prob. 8-1B Concluded

2. Accounts Receivable.....	10,025	
Sales		10,025
Cost of Merchandise Sold.....	5,130	
Merchandise Inventory.....		5,130
3. \$4,895 (\$10,025 – \$5,130)		
4. \$1,040		

Prob. 8–2B

1.

Floor Mats									
Date	Purchases			Cost of Merchandise Sold			Inventory		
	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost	Total Cost
Apr. 1							200	2.10	420
8	800	2.20	1,760				200	2.10	420
							800	2.20	1,760
20				350	2.20	770	200	2.10	420
							450	2.20	990
30				450	2.20	990	200	2.10	420
May 8				50	2.10	105	150	2.10	315
10	500	2.30	1,150				150	2.10	315
							500	2.30	1,150
27				350	2.30	805	150	2.10	315
							150	2.30	345
31				150	2.30	345	100	2.10	210
				50	2.10	105			
June 5	750	2.40	1,800				100	2.10	210
							750	2.40	1,800
13				350	2.40	840	100	2.10	210
							400	2.40	960
23	400	2.60	1,040				100	2.10	210
							400	2.40	960
							400	2.60	1,040
30				400	2.60	1,040	100	2.10	210
				100	2.40	240	300	2.40	720

Total cost of merchandise sold \$5,240

Prob. 8–2B Concluded

2. Total sales	\$10,025
 Total cost of merchandise sold.....	<u>5,240</u>
 Gross profit	<u>\$ 4,785</u>
3. \$930 (\$210 + \$720)	

Prob. 8–3B

1. First-In, First-Out Method

Model	Quantity	Unit Cost	Total Cost
AC54	4	\$272	\$1,088
	2	271	542
BH43	6	90	540
GI13	3	130	390
	2	128	256
K243	6	92	552
	2	85	170
PM18	8	259	2,072
Q661	7	180	1,260
	1	175	175
W490	4	202	808
	1	200	200
Total.....			<u>\$8,053</u>

2. Last-In, First-Out Method

Model	Quantity	Unit Cost	Total Cost
AC54	2	\$250	\$ 500
	2	260	520
	2	271	542
BH43	6	80	480
GI13	2	108	216
	2	110	220
	1	128	128
K243	8	88	704
PM18	7	242	1,694
	1	250	250
Q661	5	160	800
	3	170	510
W490	4	150	600
	1	200	200
Total.....			<u>\$7,364</u>

Prob. 8–3B Concluded

3. Average Cost Method

Model	Quantity	Unit Cost	Total Cost
AC54	6	\$266*	\$1,596
BH43	6	86	516
GI13	5	121	605
K243	8	87	696
PM18	8	253	2,024
Q661	8	172	1,376
W490	5	184	920
Total			<u>\$7,733</u>

$$*\$266 = [(2 \times \$250) + (2 \times \$260) + (4 \times \$271) + (4 \times \$272)] \div (2 + 2 + 4 + 4)$$

4. a. During periods of rising prices, the lifo method will result in a lesser amount of inventory, a greater amount of the cost of merchandise sold, and a lesser amount of net income than the other two methods. For Three Forks Appliances, the lifo method would be preferred for the current year, since it would result in a lesser amount of income tax.
- b. During periods of declining prices, the fifo method will result in a lesser amount of net income and would be preferred for income tax purposes.

Prob. 8-4B

Inventory Sheet December 31, 2006							
Description	Inventory Quantity		Unit Cost Price	Unit Market Price	Total		Lower of C or M
					Cost	Market	
A90	35	25	\$ 59	\$ 57	\$ 1,475	\$ 1,425	
		10	58		580	570	
					2,055	1,995	\$ 1,995
C18	16		206	200	3,296	3,200	3,200
D41	24	10	144	140	1,440	1,400	
		14	142		1,988	1,960	
					3,428	3,360	3,360
E34	125		25	26	3,125	3,250	3,125
F17	18	10	565	550	5,650	5,500	
		8	560		4,480	4,400	
					10,130	9,900	9,900
G68	60		15	15	900	900	900
K41	5		385	390	1,925	1,950	1,925
Q79	375		6	6	2,250	2,250	2,250
R72	100	80	20	17	1,600	1,360	
		20	18		360	340	
					1,960	1,700	1,700
S60	6	5	250	235	1,250	1,175	
		1	260		260	235	
					1,510	1,410	1,410
W21	140	100	20	18	2,000	1,800	
		40	19		760	720	
					2,760	2,520	2,520
Z35	9	7	701	700	4,907	4,900	
		2	699		1,398	1,400	
					6,305	6,300	6,300
							<u>\$38,585</u>

Prob. 8–5B

1.

AVALANCHE CO.

	<u>Cost</u>	<u>Retail</u>
Merchandise inventory, October 1.....	\$ 98,000	\$ 140,000
Net purchases	<u>813,200</u>	<u>1,200,000</u>
Merchandise available for sale	<u>\$ 911,200</u>	<u>\$ 1,340,000</u>

Ratio of cost to retail price:

$$\frac{\$ 911,200}{\$ 1,340,000} = 68\%$$

Sales.....	\$ 1,080,000	
Less sales returns and allowances	<u>40,000</u>	
Net sales		<u>1,040,000</u>
Merchandise inventory, October 31, at retail.....		<u>\$ 300,000</u>
Merchandise inventory, at estimated cost (\$300,000 × 68%).....		<u>\$ 204,000</u>

2. a.

BRIDGER CO.

Merchandise inventory, August 1.....		\$ 150,000
Net purchases.....		<u>1,375,000</u>
Merchandise available for sale.....		<u>\$ 1,525,000</u>
Sales	\$ 1,800,000	
Less sales returns and allowances.....	<u>100,000</u>	
Net sales.....	\$ 1,700,000	
Less estimated gross profit (\$1,700,000 × 35%)	<u>595,000</u>	
Estimated cost of merchandise sold		<u>1,105,000</u>
Estimated merchandise inventory, September 30....		<u>\$ 420,000</u>

b.

Estimated merchandise inventory, September 30....		\$ 420,000
Physical inventory count, September 30.....		<u>402,600</u>
Estimated loss due to theft or damage, August 1–September 30		<u>\$ 17,400</u>

SPECIAL ACTIVITIES

Activity 8–1

Since the title to merchandise shipped FOB shipping point passes to the buyer when the merchandise is shipped, the shipments made before midnight, December 31, 2006, should properly be recorded as sales for the fiscal year ending December 31, 2006. Hence, Preston Shipley is behaving in a professional manner. However, Preston should realize that recording these sales in 2006 precludes them from being recognized as sales in 2007. Thus, accelerating the shipment of orders to increase sales of one period will have the effect of decreasing sales of the next period.

Activity 8–2

- a. \$4,338,700,000 (\$3,645,200,000 + \$693,500,000)
- b. \$1,693,200,000 (\$1,637,300,000 + \$693,500,000 – \$637,600,000)

Activity 8–3

In developing a response to Jaime’s concerns, you should probably first emphasize the practical need for an assumption concerning the flow of cost of goods 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 we 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 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 goods 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 that the last-in, first-out method is often used is that it tends to minimize taxes during periods of price increases. Since 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 Jaime better understand lifo and its impact on the financial statements and taxes.

Activity 8–4

Note to Instructors: The purpose of this activity is to familiarize students with internal controls over inventory and how those controls differ according to the inventory. Students should be able to observe safeguarding controls for inventory assets.

Activity 8–5

1. a. First-in, first-out method:

2,000 units at \$32.00	\$ 64,000
2,000 units at \$29.90	59,800
3,200 units at \$29.00	92,800
<u>800 units at \$28.50</u>	<u>22,800</u>
<u>8,000 units</u>	<u>\$239,400</u>

b. Last-in, first-out method:

7,750 units at \$24.40	\$189,100
<u>250 units at \$26.00</u>	<u>6,500</u>
<u>8,000 units</u>	<u>\$195,600</u>

c. Average cost method:

8,000 units at \$27.16*	<u>\$217,280</u>
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*(\$1,358,000 ÷ 50,000) = \$27.16

2.

	<u>Fifo</u>	<u>Lifo</u>	<u>Average Cost</u>
Sales	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000
Cost of merchandise sold*	<u>1,118,600</u>	<u>1,162,400</u>	<u>1,140,720</u>
Gross profit	<u>\$ 181,400</u>	<u>\$ 137,600</u>	<u>\$ 159,280</u>

*Cost of merchandise available

for sale.....	\$ 1,358,000	\$ 1,358,000	\$ 1,358,000
Less ending inventory.....	<u>239,400</u>	<u>195,600</u>	<u>217,280</u>
Cost of merchandise sold.....	<u>\$ 1,118,600</u>	<u>\$ 1,162,400</u>	<u>\$ 1,140,720</u>

3. a. 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 many consider to best reflect the results of current operations. For Feedbag Company, the gross profit of \$137,600 reflects the matching of the most current costs of the product of \$1,162,400 against the current period sales of \$1,300,000. This matching of current costs with current sales also tends to minimize the effects of price trends on the results of operations.

The lifo method will not match current sales and the current cost of merchandise sold if the current period quantity of sales exceeds the current period quantity of purchases. In this case, the cost of merchandise sold will include a portion of the cost of the beginning inventory, which may have a unit cost from purchases made several years prior to the current

period. The results of operations may then be distorted in the sense of

Activity 8–5 Continued

the current matching concept. This situation occurs rarely in most businesses because of consistently increasing quantities of year-end inventory from year to year.

While the lifo method is often viewed as the best method for matching revenues and expenses, the fifo method is often in harmony 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 average cost method is, in a sense, a compromise between lifo and fifo. The effect of price trends is averaged, both in determining net income and in determining inventory cost.

Which inventory costing method best reflects the results of operations for Feedbag Company depends upon whether one emphasizes the importance of matching revenues and expenses (the lifo method) or whether one emphasizes the physical flow of merchandise (the fifo method). The average cost method might be considered best if one emphasizes the matching and physical flow of goods concepts equally.

- b. The fifo method 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 merchandise inventory will be assigned costs from the most recent purchases. For most businesses, these costs will reflect purchases made near the end of the period. For example, Feedbag Company's ending inventory on December 31, 2005, is assigned costs totaling \$239,400 under the fifo method. These costs represent purchases made during the period of August through December. This fifo inventory amount (\$239,400) more closely approximates the replacement cost of the ending inventory than either the lifo (\$195,600) or the average cost (\$217,280) figures.
- c. During periods of rising prices, such as shown for Feedbag Company, the lifo method will result in a lesser amount of net income than the other two methods. Hence, for Feedbag Company, the lifo method would be preferred for the current year, since it would result in a lesser amount of income tax.

During periods of declining prices, the fifo method will result in a lesser amount of net income and would be preferred for income tax purposes.

Activity 8–5 Concluded

- d. The advantages of the perpetual inventory system include the following:
1. A perpetual inventory system provides an effective means of control over inventory. A comparison of the amount of inventory on hand with the balance of the subsidiary account can be used to determine the existence and seriousness of any inventory shortages.
 2. A perpetual inventory system provides an accurate method for determining inventories used in the preparation of interim statements.
 3. A perpetual inventory system provides an aid for maintaining inventories at optimum levels. Frequent review of the perpetual inventory records helps management in the timely reordering of merchandise, so that loss of sales and excessive accumulation of inventory are avoided. An analysis of Feedbag Company's purchases and sales, as shown below, indicates that the company may have accumulated excess inventory from May through August because the amount of month-end inventory increased materially, while sales remained relatively constant for the period.

Month	Purchases	Sales	Increase (Decrease) in Inventory	Inventory at End of Month	Next Month's Sales
April	7,750 units	4,000 units	3,750 units	3,750 units	4,000 units
May	8,250	4,000	4,250	8,000	5,000
June	10,000	5,000	5,000	13,000	6,000
July	10,000	6,000	4,000	17,000	7,000
August	6,800	7,000	(200)	16,800	7,000
September	—	7,000	(7,000)	9,800	4,500
October	3,200	4,500	(1,300)	8,500	2,500
November	2,000	2,500	(500)	8,000	2,000
December	2,000	2,000	0	8,000	—

It appears that during April through July, the company ordered inventory without regard to the accumulation of excess inventory. A perpetual inventory system might have prevented this excess accumulation from occurring.

The primary disadvantage of the perpetual inventory system is the cost of maintaining the necessary inventory records. However, computers may be used to reduce this cost.

Activity 8–6

- a. **Saks uses the LIFO method for determining cost; however, market was less than this amount. Inventories must be recorded at the lower of cost or market. This is an example of the conservatism principle. Recording at lower of cost or market causes inventory obsolescence losses to be recorded on the income statement in the period of the market decline, rather than the period of sale. In the case of Saks, market may be less than cost due to fashion obsolescence, as evidenced by the markdowns.**

- b. **Consigned goods are held for sale on a commission basis. That is, Saks earns a commission upon selling the goods, but does not actually own the goods. As a result, the value of the goods should not be included in the inventory. Saks could not pledge these goods for a loan because it has no claim on these goods, nor does it assume obsolescence risk with these goods. If the goods do not sell, Saks simply returns the goods to the owner.**

Activity 8–7

a.
$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

$$\text{Number of days' sales in inventory} = \frac{\text{Inventory, end of period}}{\text{Cost of goods sold}/365}$$

Dell Computer

$$\text{Inventory turnover: } \frac{\$29,055}{(\$278 + \$306)/2} = 99.5$$

$$\text{Days' sales in inventory: } \frac{\$306}{\$29,055/365} = 3.84 \text{ days}$$

Hewlett-Packard

$$\text{Inventory turnover: } \frac{\$34,573}{(\$5,204 + \$5,797)/2} = 6.29$$

$$\text{Days' sales in inventory: } \frac{\$5,797}{\$34,573/365} = 61.20 \text{ days}$$

- b. Dell builds its computers to a customer order, called a build-to-order strategy. That is, Dell doesn't make a computer until it has an order from a customer. Customers place their orders on the Internet. Dell then builds and delivers the computer, usually in a matter of days. HP, in contrast, builds computers before actual orders are received. This is called a build-to-stock strategy. HP must forecast the type of computers customers want before it receives the orders. This strategy results in greater inventory for HP, since the computers are built before there is a sale. HP has significant finished goods inventory, while Dell has little finished goods. This difference in strategy is why you see HP computers at a retail store, but not a Dell computer. It also explains the difference in their inventory efficiency ratios.

Activity 8–8

Note to Instructors: The purpose of this activity is to familiarize students with the cost flow assumptions that an actual retailing company would use.