

Chapter 7

Inventories

Study Guide

Do You Know...?

Learning Objective 1: Describe the importance of control over inventory.

- Ways that a business can maintain control over its inventory? *(See exercises 1–3)*

Learning Objective 2: Describe three inventory cost flow assumptions and explain how they impact the income statement and balance sheet.

- How the various inventory methods affect gross profit and ending inventory under each of the three inventory cost flow methods? *(See exercises 4–6)*

Learning Objective 3: Determine the cost of inventory under the perpetual inventory system, using the FIFO, LIFO, and weighted average cost methods.

- How to calculate and record the cost of merchandise sold using the FIFO method under the perpetual inventory system? *(See exercises 7–9)*
- How to calculate and record the cost of merchandise sold using the LIFO method under the perpetual inventory system? *(See exercises 10–12)*
- How to calculate and record the cost of merchandise sold using the weighted average method under the perpetual inventory system? *(See exercises 13–15)*

Learning Objective 4: Determine the cost of inventory under the periodic inventory system, using the FIFO, LIFO, and weighted average cost methods.

- How to calculate and record the cost of merchandise sold using the FIFO method under the periodic inventory system? *(See exercises 16–18)*
- How to calculate and record the cost of merchandise sold using the LIFO method under the periodic inventory system? *(See exercises 19–21)*
- How to calculate and record the cost of merchandise sold using the weighted average method under the periodic inventory system? *(See exercises 22–24)*

Learning Objective 5: Compare and contrast the use of the three inventory costing methods.

- The effect of changes in costs and the use of the FIFO and LIFO methods on the income statement and balance sheet? *(See exercises 25–27)*

Learning Objective 6: Describe and illustrate the reporting of merchandise inventory in the financial statements.

- The value of inventory when using the lower-of-cost-or-market method? (*See exercises 28–30*)
- How to calculate the market value (net realizable value) of inventory? (*See exercises 31–33*)
- Which inventory items to include on the balance sheet at year-end? (*See exercises 34–36*)
- The effect of inventory errors on the income statement and balance sheet? (*See exercises 37–39*)

Learning Objective 7: Describe and illustrate the inventory turnover and the days' sales in inventory in analyzing the efficiency and effectiveness of inventory management.

- If a change in inventory turnover is favorable or unfavorable? (*See exercises 40–42*)
- How to determine the days' sales in inventory? (*See exercises 43–45*)

Fill-in-the-Blank Equations

1. Weighted average unit cost (under periodic inventory system) = Total costs of units available for sale/ _____
2. Net realizable value = _____ – Direct costs of disposal
3. _____ = Cost of merchandise sold/Average inventory
4. Days' sales in inventory = Average inventory/ _____

Exercises

1. Sunshine Books' manager would like to review its inventory control procedures. The company currently utilizes purchase orders and vendors' invoices. To speed sales, the company allows all employees access to inventory, although all items with a sales price over \$100 are locked in a cabinet. What control procedures does Sunshine Books use to safeguard inventory?

2. Tortoise Cleaning Co. is worried about its high loss of inventory. The company is new and small, so all employees have access to all inventory. Since the company only uses a few vendors, it trusts that the items received are the same as the items ordered. The company has yet to implement a security system because the owner is usually present when the business is open. What inventory control procedures should the company implement to decrease inventory losses?
3. Sierra Sub would like to improve its inventory control procedures. The company currently ensures that items ordered are received using purchase orders, receiving reports, and vendors' invoices. The company has a high-priced security system over the inventory room, which the owner reviews regularly to ensure no wrongdoing. Because the owner is comfortable with his system, all employees are allowed access to the inventory room. Identify which procedures Sierra Sub should implement to safeguard its inventory.
4. Using the following information, calculate gross profit and ending inventory using (a) FIFO, (b) LIFO, and (c) weighted average cost methods. The company sold two units for \$50 each on August 27.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Aug. 10	Purchase	2	\$11	\$22
12	Purchase	2	\$15	30
14	Purchase	<u>2</u>	\$22	<u>44</u>
Total		<u>6</u>		<u>\$96</u>

5. Calculate gross profit and ending inventory using (a) FIFO, (b) LIFO, and (c) weighted average cost methods. The company sold three units for \$75 each on September 29.

<u>Date</u>		<u>Units</u>	<u>Cost</u>
Sept. 6	Purchase	1	\$16
9	Purchase	1	20
11	Purchase	1	24
17	Purchase	<u>1</u>	<u>28</u>
Total		<u>4</u>	<u>\$88</u>

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6. Using (a) FIFO, (b) LIFO, and (c) weighted average cost methods, calculate gross profit and ending inventory. On October 21, the company sold five units for \$90 each.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Oct. 2	Purchase	2	\$21	\$ 42
7	Purchase	2	\$22	44
12	Purchase	1	\$28	28
18	Purchase	<u>4</u>	\$30	<u>120</u>
Total		<u>9</u>		<u>\$234</u>

7. With the information below, calculate the cost of merchandise sold for the month of October. The company uses a FIFO perpetual inventory system. The company did not have any beginning inventory.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Oct. 1	Purchase	10	\$40	\$400
5	Purchase	12	\$42	504
10	Sale of 7 units			
15	Purchase	15	\$43	645
22	Sale of 10 units			

8. At the beginning of November, Big Zero has an inventory balance of 20 units with a cost of \$20 each. Assuming Big Zero uses a FIFO perpetual inventory system, calculate Big Zero's cost of merchandise sold for the month if the company has the following purchases and sales.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Nov. 3	Sale of 15 units			
8	Purchase	6	\$22	\$132
12	Purchase	3	\$27	81
15	Sale of 10 units			

9. PBJ Co. uses a FIFO perpetual inventory system. Calculate PBJ Co.'s cost of merchandise sold for the month if the company has the following purchases and sales.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
May 1	Beginning Inventory	14	\$10	\$140
5	Purchase	16	\$14	\$224
10	Sale of 15 units			
18	Sale of 5 units			

10. Assume that the company in Exercise 7 uses a LIFO perpetual inventory system instead. Calculate the company's cost of merchandise sold.

- 11.** If Big Zero from Exercise 8 uses LIFO instead of FIFO, what will be the new cost of merchandise sold for the month?
- 12.** PBJ Co. decided to switch to a LIFO inventory system. What is the new cost of merchandise sold for the month? Use the information from Exercise 9.
- 13.** Using the weighted average method, calculate cost of merchandise sold for the company in Exercise 7 for the month. Round total cost and unit cost to the nearest cent.
- 14.** Assume Big Zero uses a weighted average method. Use the information in Exercise 8 to calculate the company's cost of merchandise sold. Round total cost and unit cost to the nearest cent. Assume that the \$20 per unit cost of the 20 units in beginning inventory is the weighted average at that point in time.
- 15.** If PBJ Co. from Exercise 9 switches to the weighted average method, what will the cost of merchandise sold be? Round total cost and unit cost to the nearest cent.
- 16.** A retail company uses a FIFO periodic inventory system. The company's physical count at the end of the month shows a total of 20 units. Calculate the cost of merchandise sold for the month, assuming that beginning inventory is \$0.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Oct. 1	Purchase	10	\$40	\$400
5	Purchase	12	\$42	504
10	Sale of 7 units			
15	Purchase	15	\$43	645
22	Sale of 10 units			

- 17.** Big Zero uses a FIFO periodic inventory system. On November 1, the company has an inventory balance of 20 units, costing \$20 each. The company's physical count at the end of the month gives a total of four units. Calculate the cost of merchandise sold for the month.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
Nov. 3	Sale of 15 units			
8	Purchase	6	\$22	\$132
12	Purchase	3	\$27	81
15	Sale of 10 units			

- 18.** PBJ Co. uses a FIFO periodic inventory system. The company shows the following transactions in its inventory for the month of May. At the end of May, a physical inventory count gives a total of 10 units on hand. Calculate the company's cost of merchandise sold for the month.

<u>Date</u>		<u>Units</u>	<u>Cost/Unit</u>	<u>Total Cost</u>
May 1	Beginning inventory	14	\$10	\$140
5	Purchase	16	\$14	224
10	Sale of 15 units			
18	Sale of 5 units			

- 19.** Assume that the company in Exercise 16 uses a LIFO periodic inventory system. Calculate the cost of merchandise sold for the month.
- 20.** Big Zero (information in Exercise 17) now uses a LIFO periodic inventory system. Calculate the cost of merchandise sold for the month.
- 21.** PBJ Co. (information in Exercise 18) changes to a LIFO periodic inventory system. Calculate the cost of merchandise sold for the month of May.
- 22.** The retail company from Exercise 16 changes to a weighted average periodic inventory system. Calculate the cost of merchandise sold for the month of October. Round the unit cost to the nearest cent.
- 23.** If Big Zero from Exercise 17 changes to a weighted average periodic inventory system, what will the company's cost of merchandise sold be for the month of November? Round the unit cost to the nearest cent.
- 24.** If PBJ Co. from Exercise 18 adopts a weighted average periodic inventory system, what will the company's cost of merchandise sold be for the month of May? Round the unit cost to the nearest cent.
- 25.** SubSlippers would like to reduce its income tax expense for the upcoming years by decreasing the company's net income. What type of inventory cost system should the company use in each situation?
- The price of the merchandise inventory is increasing.
 - The price of the merchandise inventory is decreasing.

- 26.** Sun Cherries is trying to determine which inventory cost system to use. The company would like to have high current assets in its balance sheet. What type of inventory cost system would help the company to have high ending merchandise inventory balances in each situation?
- Sun Cherries expects prices to increase for merchandise inventory.
 - Sun Cherries expects prices to decrease for merchandise inventory.
- 27.** Upon inception, Pocket Pals is trying to decide which inventory cost system would be best to match its goals. The company's shareholders want to increase their wealth with high gross profit. What type of inventory cost system would help the company have a high gross profit in each situation?
- Pocket Pals expects the cost of merchandise will increase for the firm.
 - Pocket Pals expects the cost of merchandise will decrease for the firm.
- 28.** Super Suds purchases 300 units of Product ABC for \$8.90 per unit and 250 units of Product XYZ for \$6.75 per unit. At year-end, the market value for Product ABC is \$8.55 and Product XYZ is \$6.70. Apply the lower of cost or market to each inventory item to determine the value of the total inventory.
- 29.** Super Suds had the inventory items below on hand at year-end. Some items had a decrease in the market price.
- Apply lower of cost or market to each inventory item to determine its value.
 - Apply lower of cost or market to total inventory to determine its value.

<u>Product</u>	<u># Units</u>	<u>Cost per Unit</u>	<u>Unit Market Value</u>
DEF	290	\$7.75	\$7.45
GHI	800	3.45	3.42
KLM	340	6.80	6.81
NOP	255	4.30	4.25

- 30.** Super Suds had the following in merchandise inventory at year-end. Apply lower of cost or market to each situation to determine its value.
- Apply lower of cost or market to each product.
 - Apply lower of cost or market to total inventory.

<u>Product</u>	<u># Units</u>	<u>Unit Cost</u>	<u>Unit Market Value</u>
S15	400	\$2.30	\$2.15
S32	450	4.65	4.70
W44	860	3.20	3.00
W90	295	5.15	5.10

- 31.** Capital Pets has inventory that has shown a decrease in value. The company purchased the merchandise for \$490, but expects it can only sell the merchandise for \$400. To make the sales, Capital Pets expects to incur advertising expenses of \$40. Calculate the net realizable value for the merchandise inventory.
- 32.** Capital Pets has recovered select merchandise inventory after a recent fire. The merchandise inventory had minor damage that caused the market value to decline from \$1,200 to \$900. To sell the items, the company must incur the following: rental expenses of \$200 to rent a temporary sales booth, sales commission of \$150, and advertising expenses of \$300. What is the net realizable value of the inventory?
- 33.** Moon Shapes has experienced a decrease in market value for its merchandise inventory from \$2,900 to \$2,100. The company expects to incur the following expenses in order to sell the items: sales commission of \$450, advertising expenses of \$200, and sales discounts of \$500. What is the net realizable value of the inventory?
- 34.** Otter Co. is valuing its inventory at year-end. The company has on hand \$22,000 in inventory in its warehouse. The company purchased \$4,500 of inventory, which was shipped on December 29 with FOB shipping terms. The company didn't receive the items until after year-end. The company also shipped \$6,900 of merchandise inventory to customers on December 27 with FOB shipping terms. The customers all received the items after year-end. What should the company record as inventory at year-end?
- 35.** Otter Co. has \$16,700 of merchandise inventory in its warehouse as of the year-end. Included in this amount is \$1,400 of cosigned inventory, for which Otter Co. acts as a consignee. Otter Co. did not include \$2,400 of inventory that was shipped on December 29 to customers FOB destination. The customers received the items after year-end. What should the company record as inventory on its balance sheet?
- 36.** Otter Co. acts as a consigner for \$5,000 of merchandise inventory at retail locations. The company has \$8,900 of inventory in its warehouse. The company also has a purchase with shipping terms FOB destination in transit as of year-end that includes \$1,500 of merchandise. The company has sales of \$1,100 of merchandise in transit at year-end that was shipped FOB destination. What should the company record as inventory on its balance sheet?

- 37.** At the beginning of 20Y5, Candle Co. has an inventory balance of \$32,000. The company has a net income for the year of \$56,000. Later, the accountant discovers an error that caused the beginning inventory to be understated by \$6,000.
- Assuming no other changes, what is the correct net income for the year?
 - If the error was discovered after year-end, what was the effect of the error on the balance sheet?
- 38.** Candle Co. performs an inventory count at year-end for 20Y5. The company records an ending balance of \$56,000 for inventory on its balance sheet. During the following year, the accountant discovers that the ending inventory was miscounted, causing ending inventory to be overstated by \$2,500.
- What is the effect of the misstatement on the income statement?
 - Besides ending inventory, what was the effect of the error on the balance sheet?
- 39.** During 20Y6, Candle Co. realizes that its beginning inventory for 20Y5 was overstated by \$3,200. Net income for 20Y5 was \$19,250.
- What is the correct net income for 20Y5?
 - What is the effect of the error on the balance sheet for 20Y5?
- 40.** Connection Section has the following amounts for 20Y5 and 20Y6. Calculate the inventory turnover for each year. Round answers to two decimal places. Also, determine if the change is favorable or unfavorable for the company.

	<u>20Y6</u>	<u>20Y5</u>
Beginning inventory	\$ 2,590	\$ 3,200
Ending inventory	2,800	2,590
Cost of merchandise sold	13,200	15,650

- 41.** Connection Section (CS) is comparing its inventory turnover to a competitor (MN) for 20Y5. With the amounts below, calculate the inventory turnover for each company. Round answers to two decimal places. Also, determine if Connection Section is more or less efficient at managing inventory.

	<u>CS</u>	<u>MN</u>
Beginning inventory	\$2,470	\$3,900
Ending inventory	2,200	4,900
Cost of merchandise sold	7,500	8,900

- 42.** TimeTable has recently implemented new procedures in the hope of increasing efficiency in managing inventory. With the information below, calculate the inventory turnover ratio. Round answers to two decimal places. If the company implemented the procedures in 20Y5, are they helping the company to improve? Why or why not?

	<u>20Y6</u>	<u>20Y5</u>
Beginning inventory	\$ 7,900	\$ 8,750
Ending inventory	7,120	7,900
Cost of merchandise sold	14,500	15,200

- 43.** With the following information, determine the days' sales in inventory for 20Y5 and 20Y6, using a 365-day year. Round answers to two decimal places. Is the change a favorable or unfavorable trend?

	<u>20Y6</u>	<u>20Y5</u>
Cost of merchandise sold	\$340,000	\$300,000
Beginning inventory	22,350	24,800
Ending inventory	26,900	22,350

- 44.** Calculate the days' sales in inventory for 20Y5 and 20Y6 for the following company using a 365-day year. Round answers to two decimal places. Also, indicate if the change is favorable or unfavorable for managing inventory.

	<u>20Y6</u>	<u>20Y5</u>
Cost of merchandise sold	\$289,000	\$279,000
Beginning inventory	37,800	42,750
Ending inventory	38,600	37,800

- 45.** Using the information in the table below, calculate the company's days' sales in inventory for 20Y5 and 20Y6. Use a 365-day year. Round answers to two decimal places. Also, indicate whether the company shows a favorable or unfavorable trend in managing inventory.

	<u>20Y6</u>	<u>20Y5</u>
Cost of merchandise sold	\$325,000	\$322,300
Beginning inventory	68,500	66,200
Ending inventory	73,500	68,500