

EXPANDED MATERIAL**L O 7** Apply the LIFO cost formula.

- Assume that the newest inventory units are sold and that the oldest remain in ending inventory.

L O 8 Describe the complications that arise when LIFO or weighted average cost is used with a perpetual inventory system.

- When LIFO is used with a perpetual inventory system, the identification of the “newest unit” changes every time a purchase is made. Accordingly, identification of the units sold must be done sale by sale, using the specific timing of sales and purchases.
- When the weighted average cost formula is made with a perpetual inventory system, the “weighted average cost” changes every time a purchase is made.
- When LIFO is applied, cost of goods sold (and ending inventory) under a perpetual inventory system may be different from that under a periodic system. This situation applies to the weighted average cost formula. But, under FIFO, these numbers are the same regardless of whether a perpetual system or a periodic system is used.

L O 9 Explain the gross margin method and the retail inventory method of estimating inventories.

- When applying the gross margin method, the historical gross margin percentage can be used in conjunction with sales to estimate cost of goods sold. This estimated cost of goods sold amount is subtracted from cost of goods available for sale to yield an estimate of ending inventory.
- When applying the retail inventory method, the cost-to-retail percentage is first estimated. Then ending inventory at retailing price is determined. The cost of ending inventory can be further estimated by multiplying ending inventory at retail by the cost-to-retail percentage.

Key Terms & Concepts

- consignment, 259
- cost of goods available for sale, 259
- cost of goods sold, 257
- FIFO (first in, first out), 270
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- work in process, 258

Review Problem**Cost Formulas for Inventory**

Lehi Wholesale Distributors buys printers from manufacturers and sells them to office supply stores. During January 2017, its periodic inventory records showed the following:

- Jan. 1 Beginning inventory consisted of 26 printers at \$200 each.
10 Purchased 10 printers at \$220 each.
15 Purchased 20 printers at \$250 each.
28 Purchased 9 printers at \$270 each.
31 Sold 37 printers.

Required:

Assuming that the periodic inventory system is adopted, calculate ending inventory and cost of goods sold, using:

1. FIFO
2. Weighted average cost

Solution:

When computing ending inventory and cost of goods sold, it is usually easiest to get an overview first. The following calculations are helpful:

Beginning inventory, 26 units at \$200 each.....	\$ 5,200
Purchases: 10 units at \$220	\$ 2,200
20 units at \$250	5,000
9 units at \$270	2,430
Total purchases (39 units)	<u>\$ 9,630</u>
Cost of goods available for sale (65 units).....	\$14,830
Less ending inventory (28 units).....	?
Cost of goods sold (37 units).....	<u>?</u>

Given a beginning inventory, only ending inventory and cost of goods sold will vary with the different cost formulas for inventory. Because ending inventory and cost of goods sold are complementary numbers whose sum must equal total goods available for sale, you can calculate only one of the two missing numbers in each case and then compute the other by subtracting the first number from goods available for sale. Thus, in the calculations that follow, we will always calculate ending inventory first.

1. FIFO

Since we know that 28 units are left in ending inventory, we look for the last 28 units purchased because the first units purchased would all be sold. The last 28 units purchased were:

9 units at \$270 each on January 28.....	\$2,430
19 units at \$250 each on January 15.....	4,750
Ending inventory	<u>\$7,180</u>

Ending inventory is \$7,180, and cost of goods sold is \$7,650 (\$14,830 – \$7,180).

2. Weighted Average Cost

The total cost of goods available for sale is divided by total units available for sale to get a weighted average cost:

$$\frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}} = \frac{\$14,830}{65} = \$228.15 \text{ per unit}$$

Cost of goods available for sale	\$14,830
Less ending inventory (28 units at \$228.15)	6,388
Cost of goods sold (37 units at \$228.15).....	<u>\$ 8,442</u>

Note: With the weighted average cost formula, the computed amounts may vary slightly due to rounding.

Put it on Paper**DISCUSSION QUESTIONS**

1. In wholesale and retail companies, inventory is composed of the items that have been purchased for resale. What types of inventory does a manufacturing firm have?
2. What comprises the cost of inventory?
3. Why is it more difficult to account for the inventory of a manufacturing firm than for that of a merchandising firm?
4. Who owns merchandise during shipment under the terms FOB shipping point?
5. When is the cost of inventory transferred from an asset to an expense?
6. Which inventory system (perpetual or periodic) provides better control over a firm's inventory?
7. Is the accounting for purchase discounts and purchase returns the same with the perpetual and the periodic inventory systems? If not, what are the differences?
8. Are the costs of transporting inventory into and out of a firm treated the same way? If not, what are the differences?
9. Why is it usually important to take advantage of purchase discounts?
10. Why are the closing entries for inventory under a periodic system more complicated than those for a perpetual system?
11. Why is it necessary to physically count inventory when the perpetual inventory system is being used?
12. What adjusting entries to Inventory are required when the perpetual inventory system is used?
13. What is the effect on net income when goods held on consignment are included in the ending inventory balance?
14. Is net income under- or overstated when purchased merchandise is counted and included in the inventory balance but not recorded as a purchase?
15. Is net income under- or overstated if inventory is sold and shipped but not recorded as a sale?
16. Explain the difference between cost flow and the movement of goods.
17. When should inventory be valued at its net realizable value?
18. Why is it necessary to know which cost formula for inventory is being used before the financial performances of different firms can be compared?
19. What can the inventory turnover ratio tell us?

 **PRACTICE EXERCISES****PE 7-1****LO ①****Inventory Identification**

Which one of the following is *not* an example of inventory?

- a. Cranes at a construction site
- b. Books on the shelves of a bookstore
- c. Apples in a supermarket
- d. Screws to be used in assembling tables at a carpentry shop
- e. Computer software for sale at a computer store

PE 7-2**LO ①****Costs Included in Inventory**

Which one of the following costs is *not* included in inventory for manufacturing firms?

- a. Raw materials used in production
- b. Raw materials unused and stored in the warehouse
- c. Salary paid to the company president
- d. Finished goods stored in the warehouse
- e. Work in process

- PE 7-3 Goods in Transit**
LO 1 Collin Wholesale sold \$5,000 inventory to Jennifer Company on December 27, 2017, with shipping terms of FOB destination. The inventory arrived on January 2, 2018. Which company owns the inventory at year-end (December 31, 2017)?
-
- PE 7-4 Computing Cost of Goods Sold**
LO 1 Using the following data, compute cost of goods sold.
- | | |
|---------------------------------|-------------|
| Inventory, December 31 | HK\$ 45,000 |
| Inventory, January 1 | 60,000 |
| Cash, December 31 | 19,000 |
| Purchases during the year | 250,000 |
| Sales during the year | 505,000 |
-
- PE 7-5 Inventory Purchases**
LO 2 Johnson Company purchased (on account) 250 tables to be resold to customers. The cost of each table was £150. Make the journal entry to record this transaction under (1) a perpetual inventory system and (2) a periodic inventory system.
-
- PE 7-6 Transportation Costs**
LO 2 Johnson Company incurred £920 in shipping costs related to the inventory purchases in PE 7-5. The company paid for the shipping costs in cash. Make the journal entry necessary to record this transaction under (1) a perpetual inventory system and (2) a periodic inventory system.
-
- PE 7-7 Purchase Returns**
LO 2 Johnson Company returned 20 of the tables purchased in PE 7-5 because of defects in assembly. Make the journal entry necessary to record this return under (1) a perpetual inventory system and (2) a periodic inventory system.
-
- PE 7-8 Purchase Discounts**
LO 2 Johnson Company paid for the tables purchased in PE 7-5 (less the tables returned in PE 7-7). Because the company paid within 10 days, it received a 2% discount on the purchase. Make the journal entry necessary to record this transaction under (1) a perpetual inventory system and (2) a periodic inventory system.
-
- PE 7-9 Sales**
LO 2 Johnson Company sold 70 tables on account for £200 each that were purchased in PE 7-5. Make the journal entry or entries necessary to record this transaction under (1) a perpetual inventory system and (2) a periodic inventory system. Don't forget the impact of the tables returned in PE 7-7, the 2% discount described in PE 7-8, and the transportation costs mentioned in PE 7-6.
-
- PE 7-10 Sales Returns**
LO 2 A dissatisfied customer returned six of the tables that were sold in PE 7-9. Make the journal entry or entries necessary to record this transaction under (1) a perpetual inventory system and (2) a periodic inventory system.
-
- PE 7-11 Closing Inventory Entries for a Periodic System**
LO 3 Refer to the data in PE 7-5 through 7-10. Assume the beginning balance in the inventory account was £0 for the periodic inventory system. A physical count of the inventory at the end of the period shows the ending balance of inventory is £24,550. Prepare the necessary entries for a periodic inventory system (1) to close the temporary accounts to the inventory account and (2) to adjust the inventory account to the appropriate ending balance.
-
- PE 7-12 Inventory Shrinkage**
LO 3 Boyd Company's perpetual inventory records show that the ending inventory balance should be €182,000. However, a physical count of the inventory reveals the true ending balance of inventory to be €178,500. Prepare the journal entry necessary to record inventory shrinkage for the period.

PE 7-13**LO 3****Computing Cost of Goods Sold with a Periodic System**

Seipke Company uses a periodic inventory system. Beginning inventory was NT\$6,000. Net purchases (including freight in, purchase returns, and purchase discounts) were NT\$23,000. The physical count of inventory at the end of the year revealed ending inventory to be NT\$7,500. Compute cost of goods sold.

PE 7-14**LO 3****Errors in Ending Inventory**

Arellano Company uses a periodic inventory system and overstated its ending inventory by €20,000. How will this inventory error affect reported net income for the company?

PE 7-15**LO 3****Inventory Errors—Multiple Years**

At the beginning of 2017, the company's inventory level was stated correctly. At the end of 2017, inventory was *understated* by \$2,000. At the end of 2018, inventory was *overstated* by \$450. Reported net income was \$3,000 in 2017 and \$3,000 in 2018. Compute the correct amount of net income in 2017.

PE 7-16**LO 3****Inventory Errors—Multiple Years**

Refer to PE 7-15. Compute the correct amount of net income in 2018.

PE 7-17**LO 4****Specific Identification Cost Formula**

Pearcy Company reports the following activity during October related to its inventory of cameras:

- Oct. 1 Beginning inventory consisted of 8 cameras costing NT\$100 each.
- 3 Purchased 12 cameras costing NT\$110 each.
- 14 Purchased 7 cameras costing NT\$115 each.
- 20 Purchased 15 cameras costing NT\$125 each.
- 29 Sold 26 cameras for NT\$150 each.

The 26 cameras sold on October 29 consisted of the following: 4 cameras from the beginning inventory, 5 cameras purchased on October 3, 3 cameras purchased on October 14, and 14 cameras purchased on October 20. Determine (1) the cost of goods sold for the month and (2) the ending inventory balance for October 31 using the specific identification cost formula.

PE 7-18**LO 4****FIFO Cost Formula**

Refer to the data in PE 7-17. Determine (1) the cost of goods sold for the month and (2) the ending inventory balance for October 31 using the FIFO cost formula.

PE 7-19**LO 4****Weighted Average Cost Formula**

Refer to the data in PE 7-17. Determine (1) the cost of goods sold for the month and (2) the ending inventory balance for October 31 using the weighted average cost formula. Round unit costs to the nearest tenth of a cent.

PE 7-20**LO 5****Lower of Cost or Net Realizable Value**

The following information pertains to the company's ending inventory:

	Original Cost	Net Realizable Value
Item A	\$ 720	\$ 740
Item B	375	415
Item C	1,250	1,100

Apply lower-of-cost-or-net-realizable-value accounting to each inventory item individually. What total amount should be reported as inventory in the balance sheet?

PE 7-21**LO 5****Recording an Inventory Write-down**

Amanda Company started business at the beginning of 2017. The company applies the lower-of-cost-or-net-realizable-value rule to its inventory as a whole. Inventory cost and market value as of the end of 2017 were as follows:

	Cost	Net Realizable Value
2017	\$1,500	\$800

Make the necessary adjusting entry to record the inventory write-down at the end of 2017.

PE 7-22
LO 6
Inventory Turnover

Using the following data, compute inventory turnover.

Inventory, December 31, 2017	NT\$ 75,000
Cost of goods sold	300,000
Sales	705,000
Inventory, January 1, 2017	65,000

PE 7-23
LO 6
Number of Days' Sales in Inventory

Refer to the data in PE 7-22. Compute number of days' sales in inventory.

PE 7-24
LO 6
Number of Days' Purchases in Accounts Payable

Using the following data, compute number of days' purchases in accounts payable.

Accounts payable, December 31, 2017	NT\$ 52,000
Cost of goods sold	358,000
Accounts payable, January 1, 2017	46,000
Purchases	364,000

 **EXERCISES**
E 7-1
LO 1
Goods on Consignment

Wallace Corporation has consignment arrangements with Jacob Company and with Adrienne Company. In particular, Jacob Company ships some of its goods to Wallace Corporation on consignment, and Wallace Corporation ships some of its goods to Adrienne Company on consignment. At the end of 2017, Wallace Corporation's accounting records showed:

Goods on consignment from Jacob Company	£ 8,000
Goods on consignment with Adrienne Company	10,000

1. If a physical count of inventory reveals that £30,000 of goods are on hand, what amount of ending inventory should be reported?
2. If the amount of the beginning inventory for the year was £27,000 and purchases during the year were £59,000, then what is the cost of goods sold for the year? [Assume the ending inventory from part (1).]
3. If, instead of these facts, Wallace Corporation had only £4,000 of goods on consignment with Adrienne Company, but had £10,000 of consigned goods from Jacob Company, and physical goods on hand totaled £36,000, what would the correct amount of the ending inventory be?
4. With respect to part (3), if beginning inventory totaled £24,000 and the cost of goods sold was £47,500, what were the purchases?

E 7-2**LO 1****Determining the Correct Inventory Amount**

Social Bank and Trust is considering giving Beta Company a loan. Social Bank and Trust is not sure about whether the inventory account's 2017 year-end balance in Beta company is £594,000. Discussions with the accountant reveal the following information. Determine the correct inventory amount on December 31.

1. Beta Company received goods costing £50,000 from Alpha Inc. on January 3, 2018. Alpha Inc. shipped the goods, under the terms of FOB shipping point, on December 27, 2017 to Beta Company. The goods were not included in the physical count.
2. Beta Company received goods costing £88,000 on January 4, 2018 that were shipped, under the terms of FOB shipping point, by ABC Company on December 30, 2017. The shipment was a rush order that was supposed to arrive on December 31, 2017. This purchase was included in the ending inventory of £594,000.
3. Beta Company sold goods costing £76,000 to Generale Company, under the terms of FOB shipping point, on December 27, 2017. The goods were not expected to arrive at Generale until January 10, 2018. These goods were not included in the physical inventory because they were not in the warehouse.
4. Beta sold goods costing £70,000 to Gardunord Co., under the terms of FOB destination, on December 30, 2017. The goods were received by Gardunord on January 8, 2018. They were not included in Beta Company's inventory.
5. The physical count of the inventory did not include goods costing £182,000 that were bought from DEG Company. DEG Company shipped the goods to Beta Company, under the terms of FOB destination, on December 27, 2017 and were still in transit at 2017 year-end.

E 7-3**LO 2****Recording Sales Transactions—Perpetual Inventory System**

On June 24, 2017, Reed Company sold merchandise to Emily Clark for £75,000 with terms 2/10, n/30. On June 30, Clark paid £39,200, receiving the cash discount on her payment, and returned £10,000 of merchandise, claiming that it did not meet contract terms.

Assuming that Reed uses the perpetual inventory system, record the necessary journal entries on June 24 and June 30. The cost of merchandise to Reed Company is 60% of its selling price.

E 7-4**LO 2****Perpetual Inventory System**

Orser Furniture purchases and sells dining room furniture. Its management uses the perpetual system of inventory accounting. Journalize the following transactions that occurred during October 2017:

- | | | |
|------|----|--|
| Oct. | 2 | Purchased on account HK\$27,000 of inventory with payment terms 2/10, n/30, and paid HK\$650 in cash to have it shipped from the vendor's warehouse to the Orser showroom. |
| | 5 | Sold inventory costing HK\$4,900 for HK\$8,250 on account. |
| | 10 | Paid HK\$13,950 of accounts payable (from October 2 purchase) and received the cash discount. |
| | 14 | Returned two damaged tables purchased on October 2 (costing HK\$550 each) to the vendor. |
| | 19 | Received payment of HK\$4,560 from customers. |
| | 20 | Paid the balance of the account from October 2 purchase. |
| | 22 | Sold inventory costing HK\$3,800 for HK\$5,200 on account. |
| | 24 | A customer returned a dining room set that she decided didn't match her home. She paid HK\$3,250 for it, and its cost to Orser was HK\$1,800. |

Assuming the balance in the inventory account is HK\$12,000 on October 1, and no other transactions relating to inventory occurred during the month, what is the inventory balance at the end of October?

E 7-5**LO 2****Recording Sales Transactions—Periodic Inventory System**

On June 24, 2017, Mowen Company sold merchandise to Jack Simpson for £105,000 with terms 2/10, n/30. On June 30, Simpson paid £58,800, receiving the cash discount on his payment, and returned £15,000 of merchandise, claiming that it did not meet contract terms.

Assuming that Mowen Company uses the periodic inventory system, record the necessary journal entries on June 24 and June 30.

E 7-6**LO 2****Cost of Goods Sold Calculations**

Complete the Cost of Goods Sold section for the statements of comprehensive income of the following five companies:



	Able Company	Baker Company	Carter Company	Delmont Company	Eureka Company
Beginning inventory	£32,000	£49,600	_____	_____	€ 38,400
Purchases	53,000	_____	€ 86,000	€179,000	_____
Purchase returns	_____	£ 2,000	€ 3,600	€ 400	€ 4,400
Cost of goods available for sale	84,200	_____	116,600	_____	163,000
Ending inventory	_____	44,400	30,400	57,600	_____
Cost of goods sold	66,800	134,400	_____	186,800	136,800

E 7-7**LO 2****Journalizing Inventory Transactions**

Shannon Parts uses the periodic system of inventory accounting.

1. Journalize the following transactions relating to the company's purchases in 2017:

- Jan. 24 Purchased NT\$18,000 of inventory on credit, terms 2/10, n/30.
 30 Paid NT\$17,640 to pay off the debt from the January 24 purchase.
 Mar. 14 Purchased NT\$140,000 of inventory on credit, terms 2/10, n/30. Paid NT\$1,150 in cash for transportation.
 Apr. 1 Returned defective machinery worth NT\$25,000 from the March 14 purchase to manufacturer.
 13 Paid NT\$115,000 to pay off the debt from the March 14 purchase.

2. Assuming these were the only purchases in 2017, compute the cost of goods sold. Beginning inventory was NT\$23,400 and ending inventory was NT\$26,250.

E 7-8**LO 2****LO 3****Computing Inventory and Cost of Goods Sold**

Witson Boards sells snowboard. Its product, Eagle snowboard is popular among snowboard enthusiasts. Information relating to Witson's purchases of Eagle snowboards during September is shown below. Witson sold 242 Eagle snowboards in September.

Witson uses a periodic inventory system.

Date	Explanation	Units	Unit Cost	Total Cost
Sept. 1	Inventory	46	€1,067	€ 49,082
Sept. 12	Purchases	90	1,122	100,980
Sept. 19	Purchases	40	1,144	45,760
Sept. 26	Purchases	88	1,155	101,640
	Totals	<u>264</u>		<u>€297,462</u>

1. Compute the ending inventory at September 30 and cost of goods sold using the FIFO and weighted average cost formulas.
2. For both FIFO and weighted average cost formulas, calculate the sum of ending inventory and cost of goods sold. What do you reveal from the answers you gave for each method?

E 7-9**LO 3****Adjusting Inventory (Perpetual System)**

Deer Company's perpetual inventory records show an inventory balance of HK\$120,000. Deer Company's records also show cost of goods sold totaling HK\$240,000. A physical count of inventory on December 31, 2017, showed HK\$92,000 of ending inventory.

Adjust the inventory records assuming that the perpetual inventory system is used.

E 7-10

LO ③

Adjusting Inventory and Closing Entries (Periodic System)

As of December 31, 2017, Whitney Company had the following account balances:

Inventory (beginning)	£125,000
Purchases	200,000
Purchase returns	5,000

A physical count of inventory on December 31, 2017, showed £95,000 of ending inventory. Prepare the closing entries that are needed to adjust the inventory records and close the related purchases accounts, assuming that the periodic inventory system is used.

E 7-11

LO ③

Cost of Goods Sold Calculation

The accounts of Berrett Company have the following balances for 2017:

Purchases	£780,000
Inventory, January 1, 2017	120,000
Purchase returns	22,920
Purchase discounts	2,640
Freight in	37,200
Freight out (selling expense)	7,200
Cash	12,000

The inventory count on December 31, 2017, is £144,000. Using the information given, compute the cost of goods sold for Berrett Company for 2017.

E 7-12

LO ③

Adjusting Inventory Records for Physical Counts

Cleopatra, Inc., which uses the perpetual inventory system, recently had an agency count its inventory of frozen burritos. The agency left the following inventory sheet:

Type of Merchandise	Date Purchased	Quantity on Hand	Unit Cost	Inventory Amount
Chicken Burrito	2/14/17	50	€2.50	(a)
Beef Burrito	2/18/17	19	(b)	€60.80
Bean Burrito	2/08/17	(c)	€2.10	€65.10
Veggie Burrito	2/15/17	43	(d)	€81.70

Complete the inventory calculations for Cleopatra (items a–d) and provide the journal entry necessary to adjust ending inventory, if necessary. The balance in Inventory before the physical count was €321.10.

E 7-13

LO ③

Inventory Errors

As the accountant for Synergy Solutions, you are in the process of preparing the statement of comprehensive income for the year ended December 31, 2017. In doing so, you have noticed that merchandise costing \$10,500 was sold for \$25,000 on December 31.

Before the effects of the \$25,000 sale were taken into account, the relevant statement of comprehensive income figures were:

Sales revenue	\$156,000
Beginning inventory	36,000
Purchases	55,000
Ending inventory	25,000

1. Prepare a partial statement of comprehensive income through gross margin under each of the following three assumptions:
 - a. The sale is recorded in the 2017 accounting record; the inventory is included in the ending physical inventory count.
 - b. The sale is recorded in 2017; the inventory is not included in ending inventory.

- c. The sale is not recorded in the 2017 accounting records; the merchandise is not included in the ending inventory count.
2. Under the given circumstances, which of the three assumptions is correct?
 3. Which assumption overstates gross margin (and therefore net income)?

E 7-14**LO 4****Specific Identification Method**

E's Diamond Shop is computing its inventory and cost of goods sold for November 2017. At the beginning of the month, these items were in stock:

	Quantity	Cost	Total
Ring A	8	NT\$600	NT\$ 4,800
Ring A	10	650	6,500
Ring B	5	300	1,500
Ring B	6	350	2,100
Ring B	3	450	1,350
Ring C	7	200	1,400
Ring C	8	250	2,000
			<u>NT\$19,650</u>

During the month, the shop purchased four type A rings at NT\$600, two type B rings at NT\$450, and five type C rings at NT\$300 and made the following sales:

Ring Type	Quantity Sold	Price	Cost
A	2	NT\$1,000	NT\$600
A	3	1,050	600
A	1	1,200	650
B	2	850	450
B	2	800	350
C	4	450	200
C	3	500	250
C	1	550	250

Because of the high cost per item, E's Diamond Shop uses specific identification inventory costing.

1. Calculate the cost of goods sold and ending inventory balances for November.
2. Calculate the gross margin for the month.

E 7-15**LO 4****FIFO Cost Formula**

Jefferson's Jewelry Store is computing its inventory and cost of goods sold for November 2017. At the beginning of the month, the following jewelry items were in stock (rings were purchased in the order listed):

	Quantity	Cost	Total
Ring A	8	£600	£ 4,800
Ring A	10	650	6,500
Ring B	5	300	1,500
Ring B	6	350	2,100
Ring B	3	450	1,350
Ring C	7	200	1,400
Ring C	8	250	2,000
			<u>£19,650</u>

During the month, the company purchased the following rings: four type A rings at £600, two type B rings at £450, and five type C rings at £300. Also during the month, these sales were made:

Ring Type	Quantity Sold	Price
A	2	£1,000
A	3	1,050
A	1	1,200
B	2	850
B	2	800
C	4	450
C	3	500
C	1	550

Jefferson's uses the periodic inventory system. Calculate the cost of goods sold and ending inventory balances for November using FIFO.

E 7-16
LO 4
FIFO and Weighted Average Cost Calculations (Periodic Inventory System)

The following transactions took place with respect to Model B computers in Jackson's Computer Store during November 2017:

Nov. 1	Beginning inventory	60 computers at NT\$1,350
5	Purchase of Model B computers	14 computers at NT\$1,400
11	Purchase of Model B computers	12 computers at NT\$1,500
24	Purchase of Model B computers	18 computers at NT\$1,750
30	Sale of Model B computers	40 computers at NT\$2,700

Assuming the periodic inventory system, compute cost of goods sold and ending inventory using the following cost formulas for inventory: (a) FIFO, and (b) weighted average cost.

E 7-17
LO 5
Lower of Cost or Net Realizable Value

Prepare the necessary journal entries to account for the purchases and year-end adjustments of the inventory of Payson Manufacturing Company. All purchases are made on account. Payson uses the periodic inventory system.

1. Purchased 50 standard widgets for \$8 each to sell at \$14 per unit.
2. Purchased 15 deluxe widgets at \$20 each to sell for \$30 per unit.
3. At the end of the year, the standard widgets are selling for \$15 each and the selling commission is \$3. Inventory is 25 units.
4. At the end of the year, the deluxe widgets are selling for \$23 each and the selling commission is \$5. Inventory is 12 units.
5. At the end of the second year, standard widgets are selling for \$10 each and the selling commission is \$3. Inventory is 10 units.
6. At the end of the second year, the deluxe widgets are selling for \$27 each and the selling commission is \$5. Inventory is 7 units.

E 7-18
LO 5
Lower of Cost or Net Realizable Value

Duncan Company sells lumber. Inventory cost data per 1,000 board feet of lumber for Duncan Company are as follows (in NT\$):

Item	Plywood	Maple	Pine	Redwood
Quantity on hand	21	23	38	16
Original cost	\$450	\$1,900	\$700	\$1,600
Net realizable value	350	1,850	650	1,700

1. By what amount, if any, should each item (considered separately) be written down?
2. Make the appropriate journal entry (or entries):
 - a. Assuming that each inventory item is considered separately.
 - b. Assuming that lower-of-cost-or-net-realizable-value method is applied to total inventory.

E 7-19**LO 5****Computing Lower-of-Cost-or-Net Realizable Value**

Reims Company applied FIFO to its inventory and got the following results for its ending inventory.

Running shoes	200 units at a cost per unit of €61
Tennis shoes	300 units at a cost per unit of €68
Basketball shoes	250 units at a cost per unit of €72

The net realizable value per unit at year-end was: running shoes €63, tennis shoes €64, and basketball shoes €67.

Determine the amount of ending inventory at lower-of-cost-or-net-realizable value.

E 7-20**LO 6****Inventory Ratios**

The following data are available for 2017, regarding the inventory of two companies:

	Atkins Computers	Burbank Electronics
Beginning inventory	£55,000	£80,000
Ending inventory	45,000	92,000
Cost of goods sold	720,000	850,000

Compute inventory turnover and number of days' sales in inventory for both companies. Which company is handling its inventory more efficiently?

E 7-21**LO 6****Computing Inventory Turnover and Days in Inventory**

This information is available for Jacque Corporation for 2015, 2016, and 2017.

	2015	2016	2017
Beginning inventory	£ 50,000	£ 165,000	£ 200,000
Ending inventory	165,000	200,000	240,000
Cost of goods sold	450,000	560,000	650,000
Sales revenue	600,000	800,000	950,000

Calculate inventory turnover and number of days in inventory for Jacque Corporation for 2015, 2016, and 2017. Comment on any trends.

E 7-22**LO 6****Analysis of the Operating Cycle**

The following information was taken from the records of Dallen Company for the year 2017:

Sales	€600,000
Beginning inventory	€114,000
Ending inventory	€87,000
Beginning accounts receivable	€68,000
Average collection period	44 days
Beginning accounts payable	€36,000
Ending accounts payable	€42,000
Gross margin percentage	37%

1. Compute the number of days' sales in inventory.
2. Compute the ending balance in Accounts Receivable.
3. Compute the number of days' purchases in accounts payable.
4. How many days elapse, on average, between the time Dallen must pay its suppliers for inventory purchases and the time Dallen collects cash from its customers for the sale of that same purchased inventory?
5. Repeat the computations in (1), (2), (3), and (4) using the end-of-year balance sheet balances rather than the average balances.

 PROBLEMS**P 7-1****LO 1****What Should Be Included in Inventory?**

Howard is trying to compute the inventory balance for the December 31, 2017, financial statements of his automotive parts shop. He has computed a tentative balance of NT\$61,800 but suspects that several adjustments still need to be made. In particular, he believes that the following could affect his inventory balance:

- a. A shipment of goods that cost NT\$2,000 was received on December 28, 2017. It was properly recorded as a purchase in 2017 but not counted with the ending inventory.
- b. Another shipment of goods (FOB destination) was received on January 2, 2018, and cost NT\$1,200. It was properly recorded as a purchase in 2018 but was counted with 2017's ending inventory.
- c. A NT\$3,400 shipment of goods to a customer on January 3 was recorded as a sale in 2018 but was not included in the December 31, 2017, ending inventory balance. The goods cost NT\$2,300.
- d. The company had goods costing NT\$8,000 on consignment with a customer, and NT\$6,000 of merchandise was on consignment from a vendor. Neither amount was included in the NT\$61,800 figure.
- e. The following amounts represent merchandise that was in transit on December 31, 2017, and recorded as purchases and sales in 2017 but not included in the December 31 inventory.
 1. Ordered by Howard, NT\$2,600, FOB destination
 2. Ordered by Howard, NT\$900, FOB shipping point
 3. Sold by Howard, cost NT\$3,400, FOB shipping point
 4. Sold by Howard, cost NT\$5,100, FOB destination

Required:

1. Determine the correct amount of ending inventory at December 31, 2017.
2. Assuming net purchases (before any adjustment, if any) totaled NT\$79,200 and beginning inventory (January 1, 2017) totaled NT\$38,700, determine the cost of goods sold in 2017.

P 7-2**LO 2****Perpetual and Periodic Journal Entries**

The following transactions for Goodmonth Tire Company occurred during the month of March 2017:

- a. Purchased 500 automobile tires on account at a cost of HK\$40 each for a total of HK\$20,000.
- b. Purchased 300 truck tires on account at a cost of HK\$80 each for a total of HK\$24,000.
- c. Returned 12 automobile tires to the supplier because they were defective.
- d. Paid for the automobile tires.
- e. Paid for half the truck tires.
- f. Paid the remaining balance owed on the truck tires.
- g. Sold on account 400 automobile tires at a price of HK\$90 each for a total of HK\$36,000.
- h. Sold on account 200 truck tires at a price of HK\$150 each for a total of HK\$30,000.
- i. Accepted return of 7 automobile tires from dissatisfied customers.

Required:

1. Prepare journal entries to account for the above transactions assuming a periodic inventory system.
2. Prepare journal entries to account for the above transactions assuming a perpetual inventory system.
3. Assume that inventory levels at the beginning of March (before these transactions) were 100 automobile tires that cost HK\$40 each and 70 truck tires that cost HK\$80 each. Also, assume that a physical count of inventory at the end of March revealed that 184 automobile tires and 164 truck tires were on hand. Given these inventory amounts, prepare the closing entries to account for inventory and related accounts as of the end of March.

P 7-3**LO 2****Statement of Comprehensive Income Calculations**

Stout Company has gross sales of 250% of cost of goods sold. It has also provided the following information for the calendar year 2017:

Inventory balance, January 1, 2017	€ 22,000
Total cost of goods available for sale	84,000
Sales returns	4,200
Purchase returns	2,000
Freight in	800
Sales (net of returns)	169,800
Operating expenses	7,500

Required:

Using the available information, compute the following. (Ignore income taxes.)

1. Gross sales for 2017
2. Net purchases and gross purchases for 2017
3. Cost of goods sold for 2017
4. Inventory balance at December 31, 2017
5. Gross margin for 2017
6. Net income for 2017

P 7-4**LO 2****Statement of Comprehensive Income Calculations**

	Company A	Company B	Company C	Company D
Sales revenue	€2,000	(4) _____	€480	€1,310
Beginning inventory	200	76	0	600
Purchases	(1) _____	423	480	249
Purchase returns	(20)	(19)	(0)	(8) _____
Ending inventory	300	110	(6) _____	195
Cost of goods sold	1,200	370	(7) _____	(9) _____
Gross margin	(2) _____	(5) _____	155	(10) _____
Operating expenses	108	22	34	129
Net income	(3) _____	107	121	546

Required:

Complete the statement of comprehensive income calculations by filling in all missing numbers.

P 7-5**LO 2****The Effect of Inventory Errors**

The accountant for Steele Company reported the following accounting treatments for several purchase transactions (FOB shipping point) that took place near December 31, 2017, the company's year-end:

Date Inventory Was Shipped	Was the Purchase Recorded in the Books on or before December 31, 2017?	Amount	Was the Inventory Counted and Included in Inventory Balance on December 31, 2017?
2017:			
December 26	Yes	\$1,100	Yes
December 29	Yes	800	No
December 31	No	1,800	Yes
2018:			
January 1	No	300	Yes
January 1	Yes	3,000	No
January 1	No	600	No

Required:

1. If Steele Company's records reported purchases and ending inventory balances of \$80,800 and \$29,800, respectively, for 2017, what would the proper amounts in these accounts have been?
2. What would be the correct amount of cost of goods sold for 2017, if the beginning inventory balance on January 1, 2017, was \$20,200?
3. By how much would cost of goods sold be over- or understated if the corrections in question (1) were not made?

P 7-6**LO 3****Correction of Inventory Errors**

The annual reported income for Salazar Company for the years 2014–2017 is shown here. However, a review of the inventory records reveals inventory misstatements.

	2014	2015	2016	2017
Reported net income	\$30,000	\$40,000	\$35,000	\$45,000
Inventory overstatement, end of year		3,000		2,000
Inventory understatement, end of year	4,000		1,000	

Required:

Using the data provided, calculate the correct net income for each year.

P 7-7**LO 3****The Effect of Inventory Errors**

You have been hired as the accountant for Christman Company, which uses the periodic inventory system. In reviewing the firm's records, you have noted what you think are several accounting errors made during the current year, 2017. These potential mistakes are listed as follows:

- a. A \$51,000 purchase of merchandise was properly recorded in the purchases account, but the related accounts payable account was credited for only \$4,000.
- b. A \$4,400 shipment of merchandise received just before the end of the year was properly recorded in the purchases account but was not physically counted in the inventory and, hence, was excluded from the ending inventory balance.
- c. A \$5,600 purchase of merchandise was erroneously recorded as a \$6,500 purchase.
- d. A \$1,200 purchase of merchandise was not recorded either as a purchase or as an account payable.
- e. During the year, \$3,100 of defective merchandise was sent back to a supplier. The original purchase had been recorded, but the merchandise return entry was not recorded.
- f. During the physical inventory count, inventory that cost \$800 was counted twice.

Required:

1. If the previous accountant had tentatively computed the 2017 gross margin to be \$25,000, what would be the correct gross margin for the year?
2. If these mistakes are not corrected, by how much would the 2018 net income be in error?

P 7-8**LO 4****Calculating Ending Inventory, Cost of Goods Sold and Comparing Results**

You are provided with the following information for Senta Ltd. for the month ended January 31, 2017. Senta uses a periodic inventory system.

	Date	Description	Units	Unit Cost / Selling Price
October 3		Beginning inventory	120	€48
October 6		Purchase	240	52
October 11		Sale	200	70
October 15		Purchase	140	54
October 22		Sale	130	80
October 27		Purchase	160	56
October 29		Sale	240	80

1. Calculate (i) ending inventory, and (ii) cost of goods sold under each of the following cost formulas.
 - a. FIFO
 - b. Weighted average cost
2. Compare results for the two cost formulas.

P 7-9**LO 4****Cost Formulas for Inventory**

Stocks, Inc., sells weight-lifting equipment. The sales and inventory records of the company for January through March 2017 were as follows:

	Weight Sets	Unit Cost	Total Cost
Beginning inventory, January 1	460	NT\$30	NT\$13,800
Purchase, January 16	110	32	3,520
Sale, January 25 (NT\$45 per set).....	216		
Purchase, February 16	105	36	3,780
Sale, February 27 (NT\$40 per set).....	307		
Purchase, March 10	150	28	4,200
Sale, March 30 (NT\$50 per set).....	190		

Required:

1. Determine the amounts for ending inventory, cost of goods sold, and gross margin under the following cost formulas. Use the periodic inventory system, which means that all sales are assumed to occur at the end of the period no matter when they actually occurred. Round amounts to the nearest dollar.
 - a. FIFO
 - b. Weighted average cost
2. **Interpretive Question:** Which cost formula results in the highest gross margin? Why?

P 7-10**LO 4****Periodic Inventory System with Different Cost Formulas**

Fresh Wholesale buys peaches from farmers and sells them to canneries. During May 2017, Fresh's inventory records showed the following:

		Cases	Price
May 1	Beginning inventory	5,100	£10.50
4	Purchase	1,210	12.00
9	Sale	1,020	19.65
13	Purchase	1,050	12.50
19	Sale	1,750	19.65
26	Purchase	2,120	13.00
30	Sale	2,340	19.65

Fresh Wholesale uses the periodic inventory system to account for its inventory, which means that all sales are assumed to occur at the end of the period no matter when they actually occurred.

Required:

- Calculate the cost of goods sold and ending inventory using the following cost formulas. (Calculate unit costs to the nearest cent.)
1. FIFO
 2. Weighted average cost

P 7-11**LO 4****Determining and Analyzing Cost of Goods Sold and Ending Inventory Using FIFO and Weighted Average Cost Formulas**

BEIN Distribution, Ltd. markets CDs of the band, Maygreen. At the beginning of March, BEIN had beginning inventory of 2,250 Maygreen CDs with a unit cost of €14. During March, BEIN made the following purchases of Maygreen CDs.

March 5	5,250 @ €16	March 21	3,000 @ €20
March 13	6,000 @ €18	March 26	3,000 @ €22

During March, 15,000 units were sold. BEIN uses a periodic inventory system.

Required:

1. Determine the cost of goods available for sale.
2. Determine (1) the ending inventory, and (2) the cost of goods sold under the two cost formulas (FIFO and weighted average cost). Prove the accuracy of the cost of goods sold under the FIFO and weighted average cost methods.
3. Which cost formula results in (1) the higher inventory amount on the balance sheet, and (2) the higher cost of goods sold on the statement of comprehensive income?

P 7-12

LO 6

Calculating and Interpreting Inventory Ratios

Captain Geech Boating Company sells fishing boats to fishermen. Its beginning and ending inventories for 2017 are NT\$462 million and NT\$653 million, respectively. It had cost of goods sold of NT\$1,735 million for the year ended December 31, 2017. Merchant Marine Company also sells fishing boats. Its beginning and ending inventories for the year 2017 are NT\$120 million and NT\$90 million, respectively. It had cost of goods sold of NT\$1,100 million for the year ended December 31, 2017.

Required:

1. Calculate the inventory turnover and number of days' sales in inventory for the two companies.
2. **Interpretive Question:** Are the results of these ratios what you expected? Which company is managing its inventory more efficiently?

A N A L Y T I C A L A S S I G N M E N T S

AA 7-1

Discussion

Why Use a Perpetual System?

As a consultant for ABC Consulting Company, you have been hired by Eddie's Electronics, a company that owns 25 electronics stores selling radios, televisions, compact disc players, stereos, and other electronic equipment. Since the company began business 10 years ago, it has been using a periodic inventory system. However, Eddie just returned from a seminar where some of his competitors told him he should be using the perpetual inventory system. Eddie is not sure he should believe his competitors. He wants you to advise him about his inventory choices and make a recommendation about the inventory system he should use.

AA 7-2

Discussion

Should We Reduce Inventory?

It has now been two years since you advised Eddie to switch to the perpetual inventory system. He is very happy with the additional information he has about inventory levels and theft. He has hired you for advice once again. This time, Eddie has been to an inventory management seminar where he heard that most companies have too much money tied up in inventory. He wonders if his company could be much more profitable if it reduced its inventory levels. What would you tell him?

AA 7-3

Judgment Call

You Decide: Should inventory be recorded at cost or net realizable value?

You recently ran into Bill Autograph, a friend from high school who has been busy getting his sports collectible/memorabilia business off the ground. When he heard you were an accountant, he became very interested and wanted you to clarify something. One concept he seemed particularly confused about was the fact that when inventory is purchased, it is recorded on the books at cost but the books are not adjusted for subsequent increases in the value of the inventory. This concept is of particular importance to Bill because he often buys collectibles that will increase in value depending on how successful a particular player or team becomes. Can he record increases in the value of his sports memorabilia inventory?

AA 7-4*Real Company Analysis***La-Z-Boy and McDonald's**

The following information is taken from the 2015 financial statements of La-Z-Boy, Inc., and the 2015 financial statements of McDonald's.

	La-Z-Boy	McDonald's
Cost of goods sold	\$921.142	\$5,552.2
Beginning inventory	147.01	110.0
Ending inventory	156.79	100.1

*Amounts in millions.

1. Before you do any computations, forecast which of the two companies will have a lower number of days' sales in inventory.
2. Compute each company's number of days' sales in inventory. Was your forecast in (1) correct?
3. How can these two very successful companies have number of days' sales in inventory that are so different?

AA 7-5*International***Why No LIFO?**

The LIFO cost formula for inventory is primarily a U.S. invention. Many countries around the world will not allow LIFO to be used, and other countries discourage its use.

Why do you think other countries have such an unfavorable opinion of LIFO? Think about these issues: In periods of rising prices, does the amount shown on the balance sheet relating to inventory reflect current cost? If a company's inventory on the balance sheet reflected costs from years past, what would happen to the statement of comprehensive income if those inventory costs were suddenly moved to Cost of Goods Sold? Would the result reflect a firm's actual performance?

AA 7-6*Ethics***Shipping Bricks**

In 1989, the U.S. Department of Justice Criminal Division discovered a massive inventory fraud that was being conducted by managers at MiniScribe Corporation. MiniScribe manufactured and sold computer disk drives. The fraud included placing bricks in disk drive boxes, shipping those boxes to customers, and recording a sale when the box was shipped. MiniScribe managers also knowingly shipped defective drives and recorded sales even though they knew those drives would be returned.

What would be the effect on the statement of comprehensive income and the balance sheet of shipping bricks and recording those shipments as sales? (*Hint:* Think about the journal entry that would have been made by MiniScribe accountants when a box of bricks was shipped to customers who were expecting disk drives.) Would company officials be able to fool financial statement users for a long time using this type of deception? What could financial statement users have looked for to detect this type of fraud?


EXPANDED MATERIAL

Key Terms & Concepts

- gross margin method, 285
- retail inventory method, 286

Review Problem

Perpetual Inventory System with Different Cost Formulas

Using the information from the review problem on page 289, we assume that Lehi Wholesale Distributors buys printers from manufacturers and sells them to office supply stores. During January 2017, its inventory records showed the following:

- Jan. 1 Beginning inventory consisted of 26 printers at \$200 each.
 10 Purchased 10 printers at \$220 each.
 12 Sold 15 printers.
 15 Purchased 20 printers at \$250 each.
 17 Sold 14 printers.
 19 Sold 8 printers.
 28 Purchased 9 printers at \$270 each.

Required:

Calculate ending inventory and cost of goods sold, using:

1. Perpetual FIFO
2. Perpetual LIFO
3. Perpetual weighted average cost

Solution:

When computing ending inventory and cost of goods sold, it is usually easiest to get an overview first. The following calculations are helpful:

Beginning inventory, 26 units at \$200 each.....	\$ 5,200
Purchases: 10 units at \$220	\$ 2,200
20 units at \$250	5,000
9 units at \$270	2,430
Total purchases (39 units)	\$ 9,630
Cost of goods available for sale (65 units).....	\$14,830
Less ending inventory (28 units).....	?
Cost of goods sold (37 units).....	<u>?</u>

Given a beginning inventory, only ending inventory and cost of goods sold will vary with the different cost formulas for inventory. Because ending inventory and cost of goods sold are complementary numbers whose sum must equal total goods available for sale, calculate only one of the two missing numbers in each case, and then compute the other by subtracting the first number from goods available for sale. In the calculations that follow, we will always calculate ending inventory first.

1. Perpetual FIFO

With this cost formula, records must be maintained throughout the period, as shown. The final calculation is:

Cost of goods available for sale	\$14,830
Ending inventory [(19 × \$250) + (9 × \$270)]	7,180
Cost of goods sold	<u>\$ 7,650</u>

Perpetual FIFO Calculations									
	Purchased			Sold			Remaining		
Date	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning inventory							26	\$200	\$5,200
January 10	10	\$220	\$2,200				36	26 at \$200 10 at \$220	\$7,400
12				15	15 at \$200	\$3,000	21	11 at \$200 10 at \$220	\$4,400
15	20	\$250	5,000				41	11 at \$200 10 at \$220 20 at \$250	\$9,400
17				14	11 at \$200 3 at \$220	2,860	27	7 at \$220 20 at \$250	\$6,540
19				8	7 at \$220 1 at \$250	1,790	19	19 at \$250	\$4,750
28	9	\$270	2,430				28	19 at \$250 9 at \$270	\$7,180
Totals	<u>39</u>		<u>\$9,630</u>	<u>37</u>					<u>\$7,650</u>

2. Perpetual LIFO

With this cost formula, as shown below, the calculation is:

Cost of goods available for sale	\$14,830
Ending inventory	6,230
Cost of goods sold	<u>\$ 8,600</u>

Perpetual LIFO Calculations									
	Purchased			Sold			Remaining		
Date	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost	Number of Units	Unit Cost	Total Cost
Beginning inventory							26	\$200	\$5,200
January 10	10	\$220	\$2,200				36	26 at \$200 10 at \$220	\$7,400
12				15	10 at \$220 5 at \$200	\$3,200	21	21 at \$200	\$4,200
15	20	\$250	5,000				41	21 at \$200 20 at \$250	\$9,200
17				14	14 at \$250	3,500	27	21 at \$200 6 at \$250	\$5,700
19				8	6 at \$250 2 at \$200	1,900	19	19 at \$200	\$3,800
28	9	\$270	2,430				28	19 at \$200 9 at \$270	\$6,230
Totals	<u>39</u>		<u>\$9,630</u>	<u>37</u>					<u>\$8,600</u>

3. Perpetual Weighted Average Cost

With this cost formula, a new weighted average cost of inventory items must be calculated each time a purchase is made, as shown in the following table:

Cost of goods available for sale	\$14,830
Ending inventory	<u>6,748</u>
Cost of goods sold	<u><u>\$ 8,082</u></u>

Perpetual Weighted Average Cost Calculations				
	Purchased	Sold	Remaining	Computations
Beginning inventory			26 units at \$200.00 = \$5,200	
January 10	10 units at \$220 = \$2,200		36 units at \$205.56 = \$7,400	\$5,200 + \$2,200 = \$7,400; \$7,400 ÷ 36 = \$205.56
12		15 units at \$205.56 = \$3,083	21 units at \$205.56 = \$4,317	
15	20 units at \$250 = \$5,000		41 units at \$227.24 = \$9,317	\$4,317 + \$5,000 = \$9,317; \$9,317 ÷ 41 = \$227.24
17		14 units at \$227.24 = \$3,181	27 units at \$227.24 = \$6,136	
19		8 units at \$227.24 = \$1,818	19 units at \$227.24 = \$4,318	
28	9 units at \$270 = \$2,430		28 units at \$241.00 = \$6,748	\$4,318 + \$2,430 = \$6,748; \$6,748 ÷ 28 = \$241.00

Put it on Paper**DISCUSSION QUESTIONS**

20. Which cost formula for inventory results in paying the least amount of taxes when prices are rising?
21. Why do the LIFO and weighted average cost formula for inventory result in different inventory numbers for the perpetual and periodic inventory systems?
22. When firms cannot count their inventory, how do they determine how much inventory is on hand for the financial statements?

PRACTICE EXERCISES**PE 7-25****LIFO Cost Formula****LO 7**

Refer to the data in PE 7-17. Determine (1) the cost of goods sold for the month and (2) the ending inventory balance for October 31 using the LIFO cost formula.

PE 7-26**LIFO and a Perpetual Inventory System****LO 8**

Conaton Company reported the following inventory data for 2017:

	Units	Cost per Unit
Beginning inventory	300	\$17.50
Purchases:		
July 15	900	18.00
October 11	1,200	18.25
Units remaining at year-end: 300		

Sales occurred as follows:

	Units Sold
January 16	200
July 23	600
November 1	1,300
Total	<u>2,100</u>

Compute (1) cost of goods sold and (2) ending inventory using a LIFO cost formula. The company uses a *perpetual* inventory system.

PE 7-27**LO 8****Weighted Average Cost and a Perpetual Inventory System**

Refer to PE 7-26. Compute (1) cost of goods sold and (2) ending inventory using a weighted average cost formula for year 2017. The company uses a perpetual inventory system.

PE 7-28**LO 9****Estimating Inventory**

On August 17, the company's inventory was destroyed in a hurricane-related flood. For insurance purposes, the company must reliably estimate the amount of inventory on hand on August 17. The company uses a periodic inventory system. The following data have been assembled:

Inventory, January 1	\$1,650,000
Purchases, January 1–August 17	4,130,000
Sales, January 1–August 17	6,500,000
Historical gross margin percentages:	
Last year	60%
Two years ago	65%

Estimate the company's inventory as of August 17 using (1) last year's gross margin percentage and (2) the gross margin percentage from two years ago.

 **EXERCISES**
E 7-23**LO 7****LIFO under Periodic Inventory System**

Refer to data in E 7-15 and compute cost of goods sold and ending inventory using LIFO. (Assume that the periodic inventory system is used.)

E 7-24**LO 7****Cost Formulas for Inventory**

For each of the descriptions listed below, identify the cost formula for inventory to which it applies. The cost formulas are weighted average cost, LIFO, and FIFO.

1. The value of ending inventory approximates the most recently acquired goods.
2. In a period of rising prices, cost of goods sold is higher.
3. In a period of rising prices, ending inventory is higher.
4. In a period of falling prices, income tax is higher.
5. In a period of rising prices, external users of financial statements view the company more favorably.

E 7-25**LO 8****FIFO, LIFO, and Weighted Average Cost Calculations (Perpetual Inventory System)**

The July 2017 inventory records of Mario's Bookstore showed the following:



July 1	Beginning inventory	28,000 at \$2.00 =	\$56,000
5	Sold	4,000	
13	Purchased	6,000 at \$2.25 =	13,500
17	Sold	3,000	
25	Purchased	8,000 at \$2.50 =	20,000
27	Sold	5,000	
			<u>\$89,500</u>

1. Using the perpetual inventory system, compute the ending inventory and cost of goods sold balances with (a) FIFO, (b) LIFO, and (c) weighted average cost. Compute unit costs to the nearest cent.
2. Which of the three cost formulas is best? Why?

E 7-26**LO 9****Gross Margin Method of Estimating Inventory**

Jason Company needs to estimate the inventory balance for its quarterly financial statements. The periodic inventory system is used. Records show that quarterly sales totaled \$550,000, beginning inventory was \$95,000, and net purchases totaled \$300,000; the historical gross margin percentage has averaged approximately 40%.

1. What is the approximate amount of ending inventory?
2. If a physical count shows only \$40,000 in inventory, what could be the explanation for the difference?

E 7-27**LO 9****Estimating Inventory Amounts (Gross Margin Method)**

Erin's Boutique was recently destroyed by fire. For insurance purposes, she must determine the value of the destroyed inventory. She knows the following information about her 2017 operations before the fire occurred:

Beginning inventory	\$ 6,500
Net purchases	48,000
Sales	80,000
Profit margin	35%

Estimate the cost of Erin's destroyed inventory.

E 7-28**LO 9****Estimating Inventory (Gross Margin Method)**

Ted Smyth manages an electronics store. He suspects that some employees are stealing items from inventory. Determine the cost of the missing inventory. The following information is available from the accounting records:

Beginning inventory	\$ 300,000
Sales	2,000,000
Net purchases	1,600,000
Actual ending inventory	450,000
Historical profit margin	30%

E 7-29**LO 9****Estimated Inventory (Retail Inventory Method)**

The following information is in the inventory records of Bearbabes Company for the year ended December 31.

	At Cost	At Retail
Beginning inventory	NT\$ 52,500	NT\$143,200
Goods purchased	141,750	411,800
Sales	488,700	

Use the retail inventory method to estimate Bearbabes' ending inventory at cost at the year end.

E 7-30**LO 9****Estimated Inventory (Retail Inventory Method)**

The following information is in the inventory records of Deserts Studio for the year ended December 31.

	At Cost	At Retail
Beginning inventory	NT\$ 313,500	NT\$ 773,450
Goods purchased	1,202,280	3,236,550
Sales		3,788,000
Sales returns		38,000

Required:

1. Use the retail inventory method to estimate Deserts' ending inventory at cost at the year end.
2. If the year-end physical inventory at cost is NT\$90,150, calculate the inventory loss at cost for Deserts Studio.


PROBLEMS
P 7-13**LIFO under Periodic System****LO 7**

Using the data in P7-9, determine the amounts for ending inventory, cost of goods sold, and gross margin under LIFO. Stocks, Inc. uses a periodic system for inventory.

P 7-14**LIFO under Periodic System****LO 7**

Fresh Wholesale uses the periodic inventory system to account for its inventory. Using the data in P7-10, calculate the cost of goods sold and ending inventory under LIFO.

P 7-15**Unifying Concepts: Cost Formulas for Inventory****LO 8**

Stan's Wholesale buys canned tomatoes from canneries and sells them to retail markets. During August 2017, Stan's inventory records showed the following:

		Cases	Price
Aug. 1	Beginning inventory.....	4,100	\$10.50
4	Purchase	1,500	11.00
9	Sale.....	950	19.95
13	Purchase	1,000	11.00
19	Sale.....	1,450	19.95
26	Purchase	1,700	11.50
30	Sale.....	1,900	19.95

Even though it requires more computational effort, Stan's uses the perpetual inventory system because management feels that the advantage of always having current knowledge of inventory levels justifies the extra cost.

Required:

Calculate the cost of goods sold and ending inventory using the following cost formulas. (Calculate unit costs to the nearest cent.)

1. FIFO
2. LIFO
3. Weighted average cost

P 7-16**Perpetual Inventory System with Different Cost Formulas****LO 8**

Pump-It, Inc., sells weight-lifting equipment. The sales and inventory records of the company for January through March 2017 were as follows:



	Weight Sets	Unit Cost	Total Cost
Beginning inventory, January 1	460	\$30	\$13,800
Purchase, January 16	110	32	3,520
Sale, January 25 (\$45 per set).....	216		
Purchase, February 16	105	36	3,780
Sale, February 27 (\$40 per set).....	307		
Purchase, March 10	150	28	4,200
Sale, March 30 (\$50 per set).....	190		

Required:

1. Determine the amounts for ending inventory, cost of goods sold, and gross margin under the following cost formulas. Use the perpetual inventory system. Round amounts to the nearest dollar.
 - a. FIFO
 - b. LIFO
 - c. Weighted average cost (calculate unit costs to the nearest cent)
2. **Interpretive Question:** Which cost formula results in the highest gross margin? Why?

P 7-17**LO 9****Unifying Concepts: Inventory Estimation Methods**

McCarlie Clothing Store has the following information available:

	Cost	Retailing Price	Other
Purchases during March 2017	\$215,000	\$400,000	
Inventory balance, March 1, 2017	60,000	95,000	
Sales during March		410,000	
Average gross margin rate for the last three years			46%

Required:

1. On the basis of this information, estimate the cost of inventory on hand at March 31, 2017, using the gross margin method.
2. Use the retail inventory method to estimate the cost of ending inventory at the end of March, 2017. Round to the nearest whole percent.

**AA 7-7***Real Company Analysis***General Electric**

Selected financial statement information relating to inventories for General Electric (GE) is given below.

December 31 (in millions)	2014	2015
Cost of goods sold	\$61,257	\$59,905
Inventory—FIFO valuation	17,751	22,309
Inventory—LIFO valuation	17,689	22,515

1. Compute GE's number of days' sales in inventory for 2015 using (a) the FIFO valuation for inventory and (b) the LIFO valuation for inventory. Are the differences significant enough to concern you?
2. Suppose that GE purchases its inventory with the terms "net 30 days." That is, GE's creditors expect payment in 30 days. Is GE going to have a cash flow problem?