

ACCOUNTING FOR INVENTORY

Key Terms and Concepts to Know

Ownership:

Ownership includes all inventory owned by the purchaser, regardless of location or possession. The following items are included in inventory:

- Owned inventory at the company's location
- Inventory purchased FOB Shipping Point and still in-transit from the seller
- Inventory sold FOB Destination and still in-transit to the seller
- Owned inventory on consignment to others

Physical Inventory:

- Inventory is physically counted to determine the actual quantity on hand.
- The units of inventory physical counted are then valued at cost to determine the value of inventory that SHOULD be recorded in the general ledger.
- Any difference between the general ledger balance and the value of the physical inventory is recorded as shrinkage.

Inventory Methods

- **Perpetual Inventory Method**
 - Perpetual inventory method records all inventory-related transactions in one account, Merchandise Inventory
 - Perpetual inventory method records cost of goods sold each time a sales transaction occurs.
 - Merchandise inventory account always shows the current balance of inventory on hand
- **Periodic Inventory Method**
 - Periodic inventory method records each type of inventory-related transaction in a separate account.
 - Periodic inventory method records cost of goods sold only at the end of the accounting period, based on a physical inventory
 - Merchandise inventory account is always the balance of inventory on hand at the beginning of the current period.

Inventory cost flow assumptions

- Conceptually, each inventory purchase transaction is recorded at cost. The units of inventory and their unit costs are then separated. The cost flow assumption used determines how the unit costs will be assigned to the items in inventory and the items sold
- Four inventory cost flow assumptions are: Specific Identification, Average Cost, FIFO and LIFO
- Both the inventory method used and the cost flow assumption used determine how the dollar amount of cost of goods sold and ending inventory are computed

Specific Identification

- Units in inventory and units sold are assigned their original, historic unit costs.
- Used when there are relatively few units of inventory and unit costs are relatively high and unique
- Unaffected by the choice of perpetual or periodic inventory method
- Typically used by a car dealer

Average Cost

- Units sold and units in inventory are valued at the weighted average cost per unit at that time
- For perpetual inventory, a new average cost is computed after each purchase based on the number of units and their unit costs
- For periodic inventory, the average cost is computed based on the all of the units and their unit costs available for sale during the period
- Provides a "middle of the road" value for cost of goods sold and inventory that fall between the FIFO and LIFO cost of goods sold and ending inventory amounts

First In First Out (FIFO)

- Means that the first unit costs going into inventory are the first unit costs taken out of inventory and added to cost of goods sold, leaving the most recent unit costs assigned to inventory.
- Perpetual and periodic inventory methods result in the same cost of goods sold and ending inventory because both methods start with the same oldest unit costs.
- When purchase costs of inventory are rising, cost of goods sold will contain the older, lower unit costs and inventory will contain the more recent, higher unit costs.
- When purchase costs are declining, the opposite is true.

Last In Last Out (LIFO)

- Means that the most recent unit costs going into inventory are the first unit costs taken out of inventory and added to cost of goods sold, leaving the first unit costs assigned to inventory

- Perpetual and periodic inventory methods result in the different cost of goods sold and ending inventories because the most recent unit costs change each time a purchase is made
- When purchase costs of inventory are rising, cost of goods sold will contain the more recent, higher unit costs and inventory will contain the older, lower unit costs
- When purchase costs are declining, the opposite is true

Lower of Cost or Market

- Permanent declines in the value of inventory below purchase cost must be recognized and recorded as they occur
- Market means current replacement cost for the exact same product, not a newer model. Nor does it mean selling price of the units in inventory
- Compute the proper valuation of inventory using the Lower of Cost or Market rules.

Inventory Turnover and Days in Inventory Ratios

- All turnover ratios have the same format:
$$\frac{\text{Income statement account balance}}{\text{Average balance sheet account balance}}$$
- Therefore Inventory Turnover ratio is:
$$\frac{\text{Cost of Goods Sold}}{\text{Average inventory}}$$
- Days in Inventory is:
$$\frac{365}{\text{Inventory Turnover}}$$

Key Topics to Know

Inventory Cost Flow Assumptions: Specific Identification

- Specific Identification means that each item in inventory retains its purchase cost throughout the inventory and cost of goods sold cycle. This inventory method is appropriate for a low volume, high value inventory, such as a new car dealer or a high-end jewelry store would have. Specific identification is typically used with the perpetual inventory method. This method provides the "truest" value for both ending inventory and cost of goods sold, but is too cumbersome for many applications.

Example #1

G Company had 50 units in inventory at the end of the year. Transactions during the year are as follows:

Transaction Type	# of Units	Unit Cost
Beginning Inventory	10	\$120
Purchase A	40	\$125
Sold	20	
Purchase B	50	\$130
Sold	20	
Sold	30	
Purchase C	40	\$132
Sold	20	

During the year, a total of 90 units were sold:

Beginning Inventory	5
Purchase A	25
Purchase B	20
Purchase C	40

Required: Determine the cost of goods sold and ending inventory using the specific identification method.

Solution #1

	<u>Units Available</u>	<u>Unit Cost</u>	<u>Units Sold</u>	<u>Cost of Goods Sold</u>	<u>Units in Inventory</u>	<u>Ending Inventory</u>
Beginning Inventory	10	\$120	5	\$600	5	\$600
Purchase A	40	125	25	3,125	15	1,875
Purchase B	50	130	20	2,600	30	3,900
Purchase C	40	132	40	5,280	0	0
	<u>140</u>		<u>90</u>	<u>\$11,605</u>	<u>50</u>	<u>\$6,375</u>

Inventory Cost Flow Assumptions: FIFO, LIFO and Average Cost

- Under these three inventory methods, inventory items or units do not retain their unit purchase cost after the purchase has been recorded. Instead, units sold during the accounting period and units remaining in inventory at the end of the accounting period are assigned a cost according to the rules of FIFO, LIFO or Average Cost.
- How costs are assigned the units in ending inventory and units sold is controlled by two factors:
 - Whether the Periodic or Perpetual inventory method is used.
 - Whether FIFO, LIFO or Average Cost assumption is used for the flow of costs assigned to inventory and cost of goods sold.
- In summary:
 - Under FIFO, unit costs are assigned to units sold in the order in which they were incurred, regardless of which units were actually sold. The oldest or first-in unit costs are used to calculate cost of goods sold; remaining unit costs are assigned to the units in ending inventory.
 - Under LIFO, unit costs are assigned to units sold in the reverse order of which they were incurred, regardless of which units were actually sold. The most recent or last-in unit costs are used to calculate cost of goods sold; remaining unit costs are assigned to the units in ending inventory.
 - Under Average Cost, an average cost for all units cost for all units in inventory is calculated and used to value the units in both cost of goods sold and ending inventory.

Example #2

G Company had 50 units in inventory at the end of the year. Transactions during the year are as follows:

<u>Transaction Type</u>	<u># of Units</u>	<u>Unit Cost</u>
Beginning Inventory	10	\$120
Purchase A	40	\$125
Sold	20	
Purchase B	50	\$130
Sold	20	
Sold	30	
Purchase C	40	\$132
Sold	20	

Required: Determine the cost of goods sold and ending inventory using FIFO, LIFO and average cost under both perpetual and periodic inventory assumptions.

Following are the six solutions. Solutions #1, #2 and #3 use the periodic inventory method and Solutions #4, #5 and #6 use the perpetual inventory method.

Solution #2-1 FIFO/Periodic

Note that the costs of the 50 units purchased at \$130 have been split between the units sold and the units remaining in inventory.

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>		<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
10	\$120	\$1,200			
40	\$125	5,000			
40	\$130	<u>5,200</u>	10	\$130	\$1,300
			40	\$132	5,280
		\$11,400			\$6,580

Solution #2-2 LIFO/Periodic

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>	<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
50	\$130	\$6,500	10	\$120	\$1,200
40	\$132	5,280	40	\$125	5,000
		\$11,780			\$6,200

Solution #2-3 Average Cost/Periodic

<u>Transaction Type</u>	<u># of Units</u>	<u>Unit Cost</u>	<u>Value</u>
Beginning Inventory	10	\$120	\$1,200
Purchased	40	\$125	5,000
Purchased	50	\$130	6,500
Purchased	40	\$132	5,280
Total	140	\$128.43	\$17,980

Average Cost: $\$17,980 / 140 \text{ total units} = \$128.43/\text{unit}$ (rounded). Average cost is calculated at the end of the period.

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>	<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
90	\$128.43	\$11,558.50	50	\$128.43	\$6,421.50

Solution #2-4 FIFO/Perpetual

<u>Transaction Type</u>	<u>Purchases</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory			10@\$120=\$1,200
Purchased	40@\$125=\$5,000		10@\$120=\$1,200 40@\$125=\$5,000
Sold		10@\$120=\$1,200 10@\$125=\$1,250	30@\$125=\$3,750
Purchased	50@\$130=\$6,500		30@\$125=\$3,750 50@\$130=\$6,500
Sold		20@\$125=\$2,500	10@\$125=\$1,250 50@\$130=\$6,500
Sold		10@\$125=\$1,250 20@\$130=\$2,600	30@\$130=\$3,900
Purchased	40@\$132=\$5,280		30@\$130=\$3,900 40@\$132=\$5,280
Sold		20@\$130=\$2,600	10@\$130=\$1,300 40@\$132=\$5,280
<hr/>			
Total/Balance		\$11,400	\$6,580

Solution #2-5 LIFO/Perpetual

<u>Transaction Type</u>	<u>Purchases</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory			10@\$120=\$1,200
Purchased	40@\$125=\$5,000		10@\$120=\$1,200 40@\$125=\$5,000
Sold		20@\$125=\$2,500	10@\$120=\$1,200 20@\$125=\$2,500
Purchased	50@\$130=\$6,500		10@\$120=\$1,200 20@\$125=\$2,500 50@\$130=\$6,500
Sold		20@\$130=\$2,600	10@\$120=\$1,200 20@\$125=\$2,500 30@\$130=\$3,900
Sold		30@\$130=\$3,900	10@\$120=\$1,200 20@\$125=\$2,500 40@\$132=\$5,280
Purchased	40@\$132=\$5,280		10@\$120=\$1,200 20@\$125=\$2,500 40@\$132=\$5,280
Sold		20@\$132=\$2,640	10@\$120=\$1,200 20@\$125=\$2,500 20@\$132=\$2,640
Total/Balance		\$11,640	\$6,340

Solution #2-6 Average Cost/Perpetual

<u>Transaction Type</u>	<u>Purchases</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory			10@\$120=\$1,200
Purchased	40@\$125=\$5,000		50@\$124=\$6,200
Sold		20@\$124=\$2,480	30@\$124=\$3,720
Purchased	50@\$130=\$6,500		80@\$127.75=\$10,220
Sold		20@\$127.75=\$2,555	60@\$127.75=\$7,665
Sold		30@\$127.75=\$3,833	30@\$127.75=\$3,833
Purchased	40@\$132=\$5,280		70@\$130.19=\$9,113
Sold		20@\$130.19=\$2,603	50@\$130.19=\$6,509
Total/Balance		\$11,471	\$6,509

Average cost (highlighted in red) is calculated after each purchase and is used to value both cost of goods sold and inventory until the next purchase is made.

Summary of Solutions #1 through #6

	Cost of Goods Sold		Ending Inventory	
	Units	Value	Units	Value
Periodic				
Example #1	90	\$11,400	50	\$6,580
Example #2	90	\$11,780	50	\$6,200
Example #3	90	\$11,558	50	\$6,422
Perpetual				
Example #4	90	\$11,400	50	\$6,580
Example #5	90	\$11,640	50	\$6,340
Example #6	90	\$11,471	50	\$6,509

Six different inventory methods, five different costs of goods sold and five different ending inventory values and all of them are GAAP. Periodic and perpetual FIFO will always produce the same cost of goods sold and ending inventory.

Lower of Cost or Market

- Lower of Cost or Market is an issue regardless of the inventory method or cost flow assumption made.
- At times, the replacement cost of the inventory on hand may fall below the historical acquisition cost. This could occur because of technology improvements in the production process or an increase in availability of raw materials used to make the inventory.
- This decrease or impairment of value must be quantified and accounted for in the accounting period in which it occurs.
- Market means current replacement cost not market (selling) price.
- The lower-of-cost-or-market principle may be applied in one of three ways:
 - To the entire inventory taken as a whole
 - By group or class or type of product
 - To each item individually
- The required journal entry to record the decline in the value of the inventory on hand:

Cost of Goods Sold	xxx
Merchandise Inventory	xxx

Example #3

R Company manufactures four products, two for the US market and two for the international market. As of year-end, June 30, the quantities on hand, historic cost and replacement (market) cost are shown below:

	<u>Quantity on hand</u>	<u>Historic Cost per unit</u>	<u>Market Cost per unit</u>
US Market			
Product 38	100	\$10	\$11
Product 44	75	16	14
International Market			
Product 123	60	14	13
Product 289	40	11.50	20

- Required: Determine the value of ending inventory and the required LCM adjustment for
- The entire inventory taken as a whole
 - By group or class or type of product
 - Each item individually

Solution #3

- a) LCM applied to total inventory:

	<u>Quantity on hand</u>	<u>Historic Cost per unit</u>	<u>Market Cost per unit</u>	<u>Total Cost</u>	<u>Total Market</u>
US Market					
Product 38	100	\$10	\$11	\$1,000	\$1,100
Product 44	75	16	14	1,200	1,050
International Market					
Product 123	60	14	13	840	780
Product 289	40	11.50	20	460	800
Total				<u>\$3,500</u>	<u>\$3,730</u>
Inventory Value				\$3,500	

b) LCM applied to each market:

	<u>Quantity on hand</u>	<u>Historic Cost per unit</u>	<u>Market Cost per unit</u>	<u>Total Cost</u>	<u>Total Market</u>
US Market					
Product 38	100	\$10	\$11	\$1,000	\$1,100
Product 44	75	16	14	1,200	1,050
Market total				<u>\$2,200</u>	<u>\$2,150</u>
International Market					
Product 123	60	14	13	840	780
Product 289	40	11.50	20	460	800
Market total				<u>1,300</u>	<u>1,580</u>
Inventory value				\$3,450	

c) LCM applied to each product:

	<u>Quantity on hand</u>	<u>Historic Cost per unit</u>	<u>Market Cost per unit</u>	<u>Total Cost</u>	<u>Total Market</u>
US Market					
Product 38	100	\$10	\$11	\$1,000	\$1,100
Product 44	75	16	14	1,200	1,050
International Market					
Product 123	60	14	13	840	780
Product 289	40	11.50	20	460	800
Inventory Value				\$3,290	

In summary:

- For LMC applied to the entire inventory taken as a whole: Cost was lower than Market and no adjustment to the general ledger is required
- For LMC applied to each market: Market was lower than Cost for the US market and Cost was lower than Market for the International market. An adjustment to the general ledger of \$50 credit (\$3,450 - \$3,500) is required reduce the cost of inventory to market value.
- For LCM applied to each item individually: Market was lower than Cost for the products 44 and 123 and Cost was lower than Market for the products 38 and 289. An adjustment to the general ledger of \$210 credit (\$3,290 - \$3,500) is required reduce the cost of inventory to market value.

Practice Problems

Practice Problem #1

H Company reported the following inventory transactions for the month.

<u>Transaction</u>	<u># of Units</u>	<u>Unit Cost</u>
Beginning Inventory	20	\$2,200
Purchase	25	\$2,250
Sold	10	
Sold	14	
Purchase	15	\$2,300
Sold	26	
Purchase	20	\$2,350

According to the table above, there are 30 units in the ending inventory.

Required: What is the cost of these units under each of the following assumptions?

- a) FIFO/Periodic
- b) FIFO/Perpetual
- c) LIFO/Periodic
- d) LIFO/Perpetual
- e) Average Cost/Periodic
- f) Average Cost/Perpetual

Practice Problem #2:

<u>Inventory Costs</u>	<u>Higher Total Assets</u>	<u>Higher Cost of Goods Sold</u>	<u>Higher Net Income</u>
Rising	_____	_____	_____
Falling	_____	_____	_____

Required: For each item in the table, indicate whether FIFO or LIFO will generally result in a higher reported amount when inventory costs are rising versus falling.

Practice Problem #3

During the year, U Company sold 200 units of inventory for \$50 each. U Company had the following inventory purchase transactions for the year:

<u>Date</u>	<u>Transaction</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Jan 1	Beginning Inventory	50	\$39	\$1,950
May 5	Purchase	100	38	3,800
Nov 3	Purchase	<u>80</u>	37	<u>2,960</u>
		230		\$8,710

Actual sales by the company include its entire beginning inventory, 80 units of inventory from the May 5 purchase, and 70 units from the November 3 purchase.

- Required:
- Calculate cost of goods sold for the year assuming the company uses specific identification.
 - Calculate ending inventory for the year assuming the company uses specific identification.

Practice Problem #4

F Company reports inventory using the lower-of-cost-or-market method. Below is information related to its year-end inventory:

<u>Inventory</u>	<u>Quantity</u>	<u>Cost</u>	<u>Market</u>
Item A	100	\$25	\$30
Item B	50	30	20

- Required:
- Calculate ending inventory under lower-of-cost-or-market.
 - Prepare any necessary journal entry to adjust inventory.

Practice Problem #5

T Company has the following per unit original costs and replacement costs for its inventory.

Part A: 50 units with a cost of \$5.00, and replacement cost of \$4.50

Part B: 75 units with a cost of \$6.00, and replacement cost of \$7.00

Part C: 160 units with a cost of \$3.00, and replacement cost of \$2.50

Part D: 150 units with a cost of \$8.00, and replacement cost of \$5.00

Part E: 35 units with a cost of \$9.50, and replacement cost of \$9.50

Part F: 60 units with a cost of \$10.00, and replacement cost of \$12.00

Parts B, C and F form a part group, Parts A and E form a part group and part D is its own part group.

- Required:
- a) Determine the value of ending inventory applying LCM to the entire inventory balance
 - b) Determine the value of ending inventory applying LCM to each part group
 - c) Determine the value of ending inventory applying LCM to each part individually

True / False Questions

1. Goods in transit are automatically included in a company's inventory account.
True False
2. Using the weighted-average cost method, the average cost of inventory is the average unit cost of inventory purchased during the year.
True False
3. When costs are rising, FIFO results in a higher cost of goods sold.
True False
4. When costs are rising, LIFO results in a higher ending inventory balance.
True False
5. FIFO is called the balance sheet approach because the amount it reports for ending inventory better approximates the current cost of inventory.
True False
6. The use of the lower-of-cost-or-market method to report inventory is an example of conservatism in financial reporting.
True False
7. A company that has average inventory of \$500 and cost of goods sold of \$2,000 would have an inventory turnover ratio of 0.25.
True False
8. Using the first-in, first-out method (FIFO), the first units purchased are assumed to be the first ones sold.
True False
9. For most companies, actual physical flow of their inventory follows LIFO.
True False
10. One of the primary benefits of using FIFO when inventory costs are rising is that it results in greater tax savings.
True False
11. Days in Inventory ratio is calculated as Inventory Turnover divided by 365 days.
True False

12. When the value of inventory falls below its cost, companies have the option of recording the inventory at cost or the lower market value.
True False
13. The adjustment to write down inventory from cost to its lower market value includes a debit to Cost of Goods Sold and a credit to Inventory.
True False
14. The inventory turnover ratio equals cost of goods sold divided by average inventory.
True False
15. During periods of rising costs, LIFO generally results in a higher cost of goods sold.
True False

Multiple Choice Questions

1. If the merchandise costs \$6,000, insurance in transit costs \$500, tariff costs \$50, processing by the purchasing department costs \$35, and the receiving dock personnel costs \$15, what is the total cost of the merchandise?
 - a) \$6,000
 - b) \$6,500
 - c) \$6,550
 - d) \$6,600

2. Merchandise inventory at the end of the year was inadvertently overstated. Which of the following statements correctly states the effect of the error on net income, assets and owner's equity?
 - a) Net income is overstated, assets are overstated, equity is overstated.
 - b) Net income is overstated, assets are overstated, equity is understated.
 - c) Net income is understated, assets are understated, equity is understated.
 - d) Net income is understated, assets are understated, equity is overstated.

3. Inventory is assumed to be composed of the most recent costs under which inventory method?
 - a) average cost
 - b) first-in, first-out
 - c) last-in, first-out
 - d) weighted average

4. If merchandise inventory is being valued at cost and the price level is steadily rising, the method of costing that will yield the highest net income is?
 - a) periodic
 - b) FIFO
 - c) LIFO
 - d) Average

5. The number of days' sales in inventory
 - a) Measures the length of time it takes to acquire, sell, and replace the inventory.
 - b) Is computed by dividing the cost of merchandise sold by 365.
 - c) Measures the length of time it takes to sell the merchandise on credit and collect the account receivable.
 - d) Is about the same for all industries.

The next 2 questions refer to the following information.

A Company just started business in August and they use the periodic inventory system. The following purchases were made during August:

August 01	300 units	\$1,560 total cost
August 12	400 units	2,340 total cost
August 24	400 units	2,520 total cost

6. A physical count of the inventory on August 31 reveals that there are 500 units on hand. Using a LIFO cost flow assumption, the value of the ending inventory on August 31 is:
 - a) \$3,240
 - b) \$2,730
 - c) \$5,670
 - d) \$5,160

7. A physical count of the inventory on August 31 reveals that there are 500 units on hand. Using the average cost method, the cost of goods sold for August is:
 - a) \$2,730
 - b) \$2,920
 - c) \$3,690
 - d) \$3,504

8. D Company sold 700 units of inventory during the month. Cost of goods sold assuming LIFO would be:
 - a) \$1,730
 - b) \$1,700
 - c) \$1,720
 - d) \$1,710

9. D Company sold 700 units of inventory during the month. Ending inventory assuming weighted-average cost would be (round unit cost to four decimals):
 - a) \$502
 - b) \$490
 - c) \$489
 - d) \$480

10. During periods when inventory costs are rising, cost of goods sold will most likely be:
- Higher under FIFO than LIFO.
 - Higher under FIFO than average cost.
 - Lower under average cost than LIFO.
 - Lower under LIFO than FIFO.
11. N Company has supplied the following information for their products A, B, C, and D:

	<u>Quantity</u>	<u>Historical cost</u>	<u>Market value</u>
A	15	20	25
B	20	35	30
C	40	25	40
D	25	50	35

Applying lower-of-cost-or-market to each product, the necessary adjustment would be:

- Inventory 675
Cost of Goods Sold 675
 - Cost of Goods Sold 675
Inventory 675
 - Inventory 475
Cost of Goods Sold 475
 - Cost of Goods Sold 475
Inventory 475
12. Under the principle of lower-of-cost-or-market, when a company has 10 units of inventory A with market value of \$50 and a cost of \$60, what is the adjustment?
- Debit Inventory \$100; credit Cost of Goods Sold \$100.
 - Debit Inventory \$500; credit Cost of Goods Sold \$500.
 - Debit Cost of Goods Sold \$100; credit Inventory \$100.
 - Debit Cost of Goods Sold \$500; credit Inventory \$500.
13. At the end of a reporting period, G Company determines that its ending inventory has a cost of \$300,000 and a market value of \$230,000. What would be the effect(s) of the adjustment to write down inventory to market value?
- Decrease total assets
 - Decrease net income
 - Increase retained earnings
 - Both a) and b)

14. The inventory valuation method that has the advantages of assigning an amount to inventory on the balance sheet that approximates its current cost, and also mimics the actual flow of goods for most businesses is:
- a) FIFO
 - b) Weighted average
 - c) LIFO
 - d) Specific identification
15. Goods on consignment:
- a) Are goods shipped to the consignor who sells the goods for the owner.
 - b) Are always paid for by the consignee when they take possession of the goods.
 - c) Are reported in the consignee's books as inventory.
 - d) Are goods shipped by the owner to the consignee who sells the goods for the owner.

Solutions to Practice Problems

Practice Problem #1

a) FIFO/Periodic

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>		<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
20	\$2,200	\$44,000			
25	\$2,250	56,250			
5	\$2,300	<u>11,500</u>	10	\$2,300	\$23,000
			20	\$2,350	<u>47,000</u>
		\$111,750			\$70,000

b) FIFO/Perpetual

<u>Transaction Type</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory		20@\$2,200=\$44,000
Purchased		20@\$2,200=\$44,000
		25@\$2,250=\$56,250
Sold	10@\$2,200=\$22,000	10@\$2,200=\$22,000
		25@\$2,250=\$56,250
Sold	10@\$2,200=\$22,000	
	4@\$2,250 = \$9,000	21@\$2,250=\$47,250
Purchased		21@\$2,250=\$47,250
		15@\$2,300=\$34,500
Sold	21@\$2,250=\$47,250	
	5@\$2,300 = <u>\$11,500</u>	10@\$2,300=\$23,000
Purchased		10@\$2,300=\$23,000
		20@\$2,350 = <u>\$47,000</u>
Total/Balance	\$111,750	\$70,000

c) LIFO/Periodic

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>	<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
15	\$2,250	\$33,750	20	\$2,200	\$44,000
15	\$2,300	34,500	10	\$2,250	<u>22,500</u>
20	\$2,350	<u>47,000</u>			
		\$115,250			\$66,500

d) LIFO/Perpetual

<u>Transaction Type</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory		20@\$2,200=\$44,000
Purchased		20@\$2,200=\$44,000
		25@\$2,250=\$56,250
Sold	10@\$2,250=\$22,500	20@\$2,200=\$44,000
		15@\$2,250=\$33,750
Sold		20@\$2,200=\$44,000
	14@\$2,250 = \$31,500	1@\$2,250 = \$2,250
Purchased		20@\$2,200=\$44,000
		1@\$2,250 = \$2,250
		15@\$2,300=\$34,500
Sold	10@\$2,200 = \$22,000	10@\$2,200=\$22,000
	1@\$2,250=\$2,250	
	15@\$2,300 = <u>\$34,500</u>	
Purchased		10@\$2,200=\$22,000
		20@\$2,350 = <u>\$47,000</u>
<hr/> Total/Balance	<hr/> \$112,750	<hr/> \$69,000

e) Average Cost/Periodic

Transaction Type	# of Units	Unit Cost	Value
Beginning Inventory	20	\$2,200	\$44,000
Purchased	25	\$2,250	56,250
Purchased	15	\$2,300	34,500
Purchased	20	\$2,350	47,000
Total	80	\$2,271.88	\$181,750

<u>Cost of Goods Sold</u>			<u>Ending Inventory</u>		
<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>	<u>Units</u>	<u>Cost/unit</u>	<u>Total</u>
50	\$2,271.88	\$113,593.25	30	\$2,271.88	\$68,156.25

f) Average Cost/Perpetual

<u>Transaction Type</u>	<u>Purchases</u>	<u>Cost of Goods Sold</u>	<u>Balance</u>
Beginning Inventory			20@\$2,200 = \$44,000
Purchased	25@\$2,250 = \$56,250		45@\$2,227.78 = \$100,250
Sold		10@\$2,227.78 = \$22,278	35@\$2,227.78 = \$77,972.22
Sold		14@\$2,227.78 = \$31,189	21@\$2,227.78 = \$46,783
Purchased	15@\$2,300 = \$34,500		36@\$2,257.86 = \$81,283
Sold		26@\$2,257.86 = \$58,704	10@\$2,257.86 = \$22,579
Purchased	20@\$2,350 = \$47,000		30@\$2,319.30 = \$69,579
Total/Balance		\$112,171	\$69,579

Practice Problem #2

<u>Inventory Costs</u>	<u>Higher Total Assets</u>	<u>Higher Cost of Goods Sold</u>	<u>Higher Net Income</u>
Rising	FIFO	LIFO	FIFO
Falling	LIFO	FIFO	LIFO

Practice Problem #3

a)

<u>Date</u>	<u>Transaction</u>	<u>Units Sold</u>	<u>Unit Cost</u>	<u>Total Cost of Goods Sold</u>
Jan 1	Beginning Inventory	50	\$39	\$1,950
May 5	Purchase	80	38	3,040
Nov 3	Purchase	70	37	2,590
		200		\$7,580

b)

<u>Date</u>	<u>Transaction</u>	<u>Units in Ending Inventory</u>	<u>Unit Cost</u>	<u>Total Cost of Ending Inventory</u>
Jan 1	Beginning Inventory	0	\$39	\$0
May 5	Purchase	20	38	760
Nov 3	Purchase	10	37	370
		230		\$1,130

Practice Problem #4

a)

General Ledger Balance

<u>Inventory</u>	<u>Quantity</u>	<u>Cost</u>	<u>Total</u>
Item A	100	\$25	\$2,500
Item B	50	30	1,500
			\$4,000

<u>Inventory</u>	<u>Quantity</u>	<u>Cost</u>	<u>Market</u>	<u>LCM</u>	<u>Total</u>
Item A	100	\$25	\$30	\$25	\$2,500
Item B	50	30	20	20	1,000
					\$3,500

b) Since the lower-of-cost-or-market value is \$500 less than the general ledger balance ($\$4,000 - 3,500 = \500), the required journal entry is:

Cost of Goods Sold	500	
Inventory		500

Practice Problem #5

	<u>Quantity</u>	<u>Per Unit</u>		<u>Total</u>		<u>By Part</u>
		<u>Cost</u>	<u>Market</u>	<u>Cost</u>	<u>Market</u>	
Part A	50	\$5.00	\$4.50	\$250	225	\$225
Part B	75	6.00	7.00	450	525	450
Part C	160	3.00	2.50	480	400	400
Part D	150	8.00	5.00	1,200	750	750
Part E	35	9.50	9.50	3,325	3,325	3,325
Part F	60	10.00	12.00	600	720	600
				<u>\$6,305</u>	<u>\$5,945</u>	<u>\$5,750</u>

	<u>Quantity</u>	<u>Total</u>		<u>Group B, C, F</u>		<u>Group A, E</u>		<u>Group D</u>	
		<u>Cost</u>	<u>Market</u>	<u>Cost</u>	<u>Market</u>	<u>Cost</u>	<u>Market</u>	<u>Cost</u>	<u>Market</u>
Part A	50	\$250	225			\$250	\$225		
Part B	75	450	525	\$450	\$525				
Part C	160	480	400	480	400				
Part D	150	1,200	750					\$1,200	\$750
		0							
Part E	35	3,325	3,325			3,325	3,325		
		5							
Part F	60	600	720	600	720				
				<u>\$1,530</u>	<u>\$1,645</u>	<u>\$3,575</u>	<u>\$3,550</u>	<u>\$1,200</u>	<u>\$750</u>
									<u>\$5,830</u>

The three possible inventory values are:

- a) \$5,945 for LCM applied to the total inventory
- b) \$5,830 for LCM applied to each product group (\$1,530 + 3,550 + \$750)
- c) \$5,750 for LCM applied to each part

Solutions to True / False Problems

1. False – goods in transit are included in the company's inventory only if they are owned by the company.
2. False - the average is a weighted-average cost which includes both beginning inventory and purchases and is equal to total cost of goods available for sale divided by the total number of units available for sale.
3. False - during periods of rising costs, FIFO generally results in a lower cost of goods sold.
4. False - during periods of rising costs, LIFO generally results in a lower ending inventory balance.
5. True
6. True
7. False - the inventory turnover ratio equals cost of goods sold (\$2,000) divided by average inventory (\$500), which equals 4.0 in this example.
8. True
9. False - most often, the actual physical flow of goods follows FIFO.
10. False - when inventory costs are rising, LIFO provides greater tax savings.
11. False – Days in Inventory is calculated as 365 divided by Inventory Turnover
12. False - companies must report inventory at the lower of cost or market value.
13. True
14. True
15. True

Solutions to Multiple Choice Questions

- | | |
|-----|---|
| 1. | C |
| 2. | A |
| 3. | B |
| 4. | B |
| 5. | A |
| 6. | B |
| 7. | D |
| 8. | C |
| 9. | C |
| 10. | C |
| 11. | D |
| 12. | C |
| 13. | D |
| 14. | A |
| 15. | D |