

Inventory Own

**DEMONSTRATION PROBLEM 9-1**

Following are data related to the beginning inventory and purchases of a product of the Van Company for the year 1987:

Inventory, January 1 . . . . .	5,000 @ \$2.00
March 15 . . . . .	4,000 @ \$2.10
May 10 . . . . .	7,000 @ \$2.25
August 12 . . . . .	5,000 @ \$2.40
November 20 . . . . .	3,000 @ \$2.60
	<u>24,000</u>

During the year, 20,000 units were sold. Periodic inventory procedure is used.

*Required:* Compute (1) the ending inventory and (2) the cost of goods sold under each of the following methods:

- Fifo.
- Lifo.
- Weighted-average.

**Solution to demonstration problem 9-1**

- The ending inventory consists of 4,000 units ( $24,000 - 20,000$ ).

- Ending inventory under Fifo:

<i>Purchased</i>	<i>Units</i>	<i>Unit cost</i>	<i>Total cost</i>
November 20 . . . . .	3,000	\$2.60	\$ 7,800
August 12 . . . . .	1,000	2.40	2,400
	<u>4,000</u>		<u>\$10,200</u>

- Ending inventory under Lifo:

	<i>Units</i>	<i>Unit cost</i>	<i>Total cost</i>
Inventory, January 1 . . . . .	<u>4,000</u>	\$2.00	<u>\$ 8,000</u>

- Ending inventory under weighted-average:

<i>Purchased</i>	<i>Units</i>	<i>Unit cost</i>	<i>Total cost</i>
Inventory, January 1 . . . . .	5,000	\$2.00	\$10,000
March 15 . . . . .	4,000	2.10	8,400
May 10 . . . . .	7,000	2.25	15,750
August 12 . . . . .	5,000	2.40	12,000
November 20 . . . . .	3,000	2.60	7,800
	<u>24,000</u>		<u>\$53,950</u>

Weighted-average unit cost is  $\$53,950 \div 24,000$ , or \$2.248.  
Ending inventory cost is  $\$2.248 \times 4,000 = \underline{\underline{\$8,992}}$ .

2. Cost of goods sold under each method is:

a.	Cost of goods available for sale	\$53,950
	Ending inventory	10,200
	Cost of goods sold	<u>\$43,750</u>
b.	Cost of goods available for sale	\$53,950
	Ending inventory	8,000
	Cost of goods sold	<u>\$45,950</u>
c.	Cost of goods available for sale	\$53,950
	Ending inventory	8,992
	Cost of goods sold	<u>\$44,958</u>

### DEMONSTRATION PROBLEM 9-2

- a. The Meaders Company reported annual net income as follows:

1985 . . . . .	\$68,000
1986 . . . . .	71,000
1987 . . . . .	60,000

Analysis of the inventories shows that certain clerical errors were made with the following results:

	Incorrect inventory amount	Correct inventory amount
December 31, 1985 . . . . .	\$12,000	\$14,200
December 31, 1986 . . . . .	14,000	11,700

What is the corrected net income for 1985, 1986, and 1987?

- b. The records of Munch Corporation show the following account balances on the day a fire destroyed the company's inventory:

Inventory, January 1 . . . . .	\$100,000
Purchases (to date) . . . . .	500,000
Sales (to date) . . . . .	750,000
Average rate of gross margin for the past five years . . . . .	30% of net sales

Compute an estimated value of the ending inventory using the gross margin method.

- c. The records of Turner Company show the following account balances at year-end:

	Cost	Retail
Beginning inventory, January 1 . . . . .	\$ 44,000	\$ 62,500
Purchases . . . . .	170,000	250,000
Transportation-in . . . . .	4,750	
Sales . . . . .		252,500

Compute the estimated ending inventory at cost using the retail inventory method.

**Solution to demonstration problem 9-2**

	1985	1986	1987	Total
Net income as reported . . . . .	\$68,000	\$71,000	\$60,000	\$199,000
Adjustments:				
(1) . . . . .	2,200			
(2) . . . . .		(2,200)		
(2) . . . . .			(2,300)	
(3) . . . . .			2,300	
Adjusted net income . . . . .	<u>\$70,200</u>	<u>\$66,500</u>	<u>\$62,300</u>	<u>\$199,000</u>

- (1) Ending inventory understated ( $\$14,200 - \$12,000 = \$2,200$ ).  
 (2) Beginning inventory understated ( $\$14,200 - \$12,000 = \$2,200$ ).  
 Ending inventory overstated ( $\$14,000 - \$11,700 = \$2,300$ ).  
 (3) Beginning inventory overstated ( $\$14,000 - \$11,700 = \$2,300$ ).

**b. Computation of inventory:**

Inventory, January 1 . . . . .	\$100,000
Purchases . . . . .	<u>500,000</u>
Cost of goods available for sale . . . . .	\$600,000
Less: Estimated cost of goods sold	
Net sales . . . . .	\$750,000
Gross margin ( $\$750,000 \times 0.30$ ) . . . . .	<u>225,000</u>
Estimated cost of goods sold . . . . .	<u>525,000</u>
Inventory at cost, estimated by gross margin method . . . . .	<u>\$ 75,000</u>

**c.**

	Cost	Retail
Beginning inventory January 1 . . . . .	\$ 44,000	\$ 62,500
Purchases . . . . .	170,000	250,000
Transportation . . . . .	4,750	—
Goods available for sale . . . . .	\$218,750	\$312,500
Cost/retail price ratio:		
$\$218,750/\$312,500 = 70\%$		
Sales . . . . .		252,500
Ending inventory at retail price . . . . .		\$ 60,000
Times cost/retail price ratio . . . . .		$\times 70\%$
Ending inventory at cost, December 31 . . . . .	<u>42,000</u>	
Cost of goods sold . . . . .	<u>\$176,750</u>	

**QUESTIONS**

1. Why is proper inventory valuation so important?
2. Why does an understated ending inventory understate net income for the period by the same amount?
3. Why does an error in ending inventory affect two accounting periods?
4. What cost elements are included in inventory? What practical problems are faced in including the costs of such elements?
5. What is the meaning of "to take a physical inventory?"
6. What is the accountant's responsibility regarding the taking of a physical inventory?
7. What are cost flows? What is meant by the physical flow of goods? Is there or should there be a relationship between cost flows and the physical flow of goods?
8. Indicate how a company can manipulate its net income if it uses LIFO. Is the same opportunity available under FIFO? Why or why not?
9. What are the main advantages of using FIFO and LIFO?

10. Which inventory method is the "correct" one? Can a company change inventory methods?
11. What is net realizable value, and how is it used?
12. Why is it considered acceptable accounting practice to recognize a loss by writing down an item of merchandise in inventory to market, but unacceptable to recognize a gain by writing up an inventory item?
13. Under what conditions will the gross margin method of computing an estimated inventory yield approximately correct amounts?
14. What are the main reasons for estimating ending inventory?
15. How can the retail method be used to estimate inventory?
16. When is it advisable to use perpetual inventory procedure? What problem is faced in accounting for purchase discounts under perpetual procedure? How is this problem best resolved?

## EXERCISES

### E-1

**Determine effect of inventory errors**

The Shane Company reported annual net income as follows:

1986 . . . . .	\$75,700
1987 . . . . .	76,200
1988 . . . . .	64,060

Analysis of its inventories shows that the following incorrect inventory amounts were used (the correct amounts are also shown):

	<i>Incorrect inventory amount</i>	<i>Correct inventory amount</i>
December 31, 1986 . . . . .	\$12,000	\$14,000
December 31, 1987 . . . . .	13,500	11,500

Compute the annual net income for each of the three years assuming the correct inventories had been used.

### E-2

**Compute ending inventory under Fifo, Lifo, and weighted-average methods**

The Parker Company inventory records show:

	<i>Units</i>	<i>Unit Cost</i>	<i>Total Cost</i>
Beginning inventory . . .	3,000	\$9.00	\$27,000
February 14 . . . . .	900	8.40	7,560
March 18 . . . . .	2,400	8.25	19,800
July 21 . . . . .	1,800	8.70	15,660
September 27 . . . . .	1,800	8.40	15,120
November 27 . . . . .	600	8.85	5,310

The December 31 inventory was 4,200 units. Present a short schedule showing the measurement of the ending inventory using:

- The Fifo method.
- The Lifo method.
- The weighted-average method.

### E-3

**Compute effect on net income under Fifo and Lifo and compare the results**

The Wood Company's inventory of a certain product was 12,000 units with a cost of \$32 each on January 1, 1987. During 1987, numerous units of this product were purchased and sold. Also during 1987, the purchase price of this product fell steadily until at year-end it was \$24. The inventory at year-end was 18,000 units. State which of the two methods of inventory measurement, Lifo or Fifo, would have resulted in the higher reported net income, and explain briefly.

**E-10****Estimate ending inventory using gross margin method**

Westside Company takes a physical inventory at the end of each calendar-year accounting period to establish the ending inventory amount for financial statement purposes. Its financial statements for the past few years indicate an average gross margin on net sales of 25%. On July 18, a fire destroyed the entire store building and its contents. The records were in a fireproof vault and are intact. These records, through July 17, show:

Merchandise inventory, January 1 . . .	\$ 420,000
Merchandise purchases . . . . .	5,880,000
Purchase returns . . . . .	84,000
Transportation-in . . . . .	315,000
Sales . . . . .	8,960,000
Sales returns . . . . .	420,000

The company was fully covered by insurance and asks you to determine the amount of its claim for loss of merchandise.

**E-11****Estimate ending inventory using gross margin method**

Kobs Company takes a physical inventory at the end of each calendar-year accounting period. Its financial statements for the past few years indicate an average gross margin on net sales of 30%.

On June 12, a fire destroyed the entire store building and the inventory. The records were in a fireproof vault and are intact. These records, through June 11, show:

Merchandise inventory, January 1 . . .	\$ 25,000
Merchandise purchases . . . . .	625,000
Purchase returns . . . . .	7,500
Transportation-in . . . . .	42,500
Sales . . . . .	775,000

The company was fully covered by insurance and asks you to determine the amount of its claim for loss of merchandise.

**E-12****Estimate ending inventory using retail inventory method**

The Michaels Company, Inc., records show the following account balances for the year ending December 31, 1986:

	<i>Cost</i>	<i>Retail</i>
Purchases . . . . .	\$10,000	\$15,000
Beginning inventory . . . . .	16,400	23,000
Transportation-in . . . . .	200	
Sales . . . . .		21,000

Using the above data, compute the estimated cost of ending inventory using the retail method of inventory valuation.

**E-13****Prepare journal entries for inventory under perpetual Fifo procedure**

The following are selected transactions and other data of the Bonner Company:

1. Purchased 20 units @ \$75/unit on account on September 18, 1986.
2. Sold 6 units on account for \$120/unit on September 20, 1986 (assume Fifo).
3. At year-end a physical inventory was taken, and a shortage of \$550 was discovered.

Prepare journal entries for the above transactions using perpetual inventory procedure. Assume the beginning inventory consists of 20 units @ \$70/unit.

**E-14****Prepare journal entries under perpetual Fifo procedure**

Following are selected transactions of the Nash Company:

*Transactions:*

1. Purchased 100 units of merchandise at \$200 each, terms 2/10, n/30.
2. Paid the invoice in No. 1 within the discount period.
3. Sold 80 units at \$320 each for cash.
4. Purchased 100 units at \$300, terms 2/10, n/30.
5. Paid the invoice in No. 4 within the discount period.
6. Sold 60 units at \$460 each for cash.

E-4

**Prepare journal entries affecting inventory using periodic procedure**

Following are inventory data for 1987 for the Franks Company:

1. January 1 inventory on hand, 400 units @ \$6.
2. January sales were 80 units.
3. February sales totaled 120 units.
4. March 1, purchased 200 units @ \$6.30.
5. Sales for March through August were 160 units.
6. September 1, purchased 40 units @ \$6.90.
7. September through December sales were 180 units.

Prepare only the journal entries affecting inventory assuming use of periodic procedure. A physical inventory on December 31, 1987, showed 100 units on hand. Price the ending inventory at its weighted-average cost.

E-5

**Compute cost of ending inventory using Fifo, Lifo, and weighted-average**

Listed below are the purchases of Product A made by the Red Company in its first year of operations:

January 2 . . . . .	700 @ \$2.96
March 31 . . . . .	600 @ \$2.80
July 5 . . . . .	1,200 @ \$3.04
November 1 . . . . .	900 @ \$3.20

The ending inventory for the year consisted of 1,200 units.

- a. Compute the cost of the ending inventory using each of the following methods: (1) Fifo, (2) Lifo, and (3) weighted-average.
- b. Which method would yield the highest amount of gross margin? Explain why it does.

E-6

**Compute inventory profit under Fifo**

A company purchased 1,000 units of a product at \$20 and 2,000 units at \$22. It sold all of these units at \$30 each at a time when the current cost to replace the units sold was \$23. Compute the amount of gross margin under Fifo that Lifo supporters would call inventory, or "paper," profits.

E-7

**Compute value of ending inventory using LCM applied on an item-by-item basis**

Your assistant has compiled the following data to assist you in determining the decline in inventory from cost to the lower-of-cost-or-market method applied on an item-by-item basis:

Item	Quantity (units)	Unit cost	Unit market	Total cost	Total market
A . . . . .	300	\$48	\$46	\$14,400	\$13,800
B . . . . .	300	24	28	7,200	8,400
C . . . . .	900	18	18	16,200	16,200
D . . . . .	500	10	11	5,000	5,500

Determine the dollar amount of the ending inventory using the lower-of-cost-or-market method, determined on an item-by-item basis, and the amount of the decline from cost to lower-of-cost-or-market.

E-8

**Compute value of total inventory using LCM**

Use the data in Exercise E-7 above to compute the cost of the ending inventory using the lower-of-cost-or-market method applied to the total inventory.

E-9

**Compute carrying cost of inventory items**

Kelley Motor Company owns an automobile that it has used as a demonstrator for eight months. The auto has a list or sticker price of \$20,000 and cost Kelley \$17,000. The auto is on hand at the end of the fiscal year, at which time it has an expected selling price of \$18,000. Costs expected to be incurred to sell the auto include tune-up and maintenance costs of \$400, advertising of \$100, and a commission to the employee selling the auto of 5% of selling price. Compute the amount at which the auto should be carried in inventory.

**E-10****Estimate ending inventory using gross margin method**

Westside Company takes a physical inventory at the end of each calendar-year accounting period to establish the ending inventory amount for financial statement purposes. Its financial statements for the past few years indicate an average gross margin on net sales of 25%. On July 18, a fire destroyed the entire store building and its contents. The records were in a fireproof vault and are intact. These records, through July 17, show:

Merchandise inventory, January 1 . . .	\$ 420,000
Merchandise purchases . . . . .	5,880,000
Purchase returns . . . . .	84,000
Transportation-in . . . . .	315,000
Sales . . . . .	8,960,000
Sales returns . . . . .	420,000

The company was fully covered by insurance and asks you to determine the amount of its claim for loss of merchandise.

**E-11****Estimate ending inventory using gross margin method**

Kobs Company takes a physical inventory at the end of each calendar-year accounting period. Its financial statements for the past few years indicate an average gross margin on net sales of 30%.

On June 12, a fire destroyed the entire store building and the inventory. The records were in a fireproof vault and are intact. These records, through June 11, show:

Merchandise inventory, January 1 . . .	\$ 25,000
Merchandise purchases . . . . .	625,000
Purchase returns . . . . .	7,500
Transportation-in . . . . .	42,500
Sales . . . . .	775,000

The company was fully covered by insurance and asks you to determine the amount of its claim for loss of merchandise.

**E-12****Estimate ending inventory using retail inventory method**

The Michaels Company, Inc., records show the following account balances for the year ending December 31, 1986:

	<i>Cost</i>	<i>Retail</i>
Purchases . . . . .	\$10,000	\$15,000
Beginning inventory . . . . .	16,400	23,000
Transportation-in . . . . .	200	
Sales . . . . .		21,000

Using the above data, compute the estimated cost of ending inventory using the retail method of inventory valuation.

**E-13****Prepare journal entries for inventory under perpetual Fifo procedure**

The following are selected transactions and other data of the Bonner Company:

1. Purchased 20 units @ \$75/unit on account on September 18, 1986.
2. Sold 6 units on account for \$120/unit on September 20, 1986 (assume Fifo).
3. At year-end a physical inventory was taken, and a shortage of \$550 was discovered.

Prepare journal entries for the above transactions using perpetual inventory procedure. Assume the beginning inventory consists of 20 units @ \$70/unit.

**E-14****Prepare journal entries under perpetual Fifo procedure**

Following are selected transactions of the Nash Company:

*Transactions:*

1. Purchased 100 units of merchandise at \$200 each, terms 2/10, n/30.
2. Paid the invoice in No. 1 within the discount period.
3. Sold 80 units at \$320 each for cash.
4. Purchased 100 units at \$300, terms 2/10, n/30.
5. Paid the invoice in No. 4 within the discount period.
6. Sold 60 units at \$460 each for cash.

Prepare journal entries for the six numbered items above. Assume goods acquired are recorded at net invoice prices, accounted for under perpetual procedure, and the Fifo inventory method is used.

**E-15**

**Compute the cost of goods sold assuming perpetual moving weighted-average procedure**

Compute the cost of the goods sold in Exercise E-14 above, item No. 6, assuming perpetual procedure is used, with unit costs calculated under the weighted-average method. Round decimals to three places.

**PROBLEMS, SERIES A****P9-1-A**

**Determine effects of inventory errors**

Nix Company reported net income of \$130,000 for 1987, \$135,000 for 1988, and \$145,000 for 1989, using the incorrect inventory amounts shown for December 31, 1987, and 1988. The correct inventory amounts are also shown for those dates. The correct December 31, 1989, inventory amount was used in calculating 1989 net income.

	<i>Incorrect</i>	<i>Correct</i>
December 31, 1987 . . . . .	\$40,000	\$45,000
December 31, 1988 . . . . .	38,000	35,000

**Required:** Prepare a schedule that shows: (1) the reported net income for each year in one column, (2) the amount of correction needed for each year in a second column, and (3) the correct net income for each year in a third column.

**P9-2-A**

**Determine effects of inventory errors**

An examination of the records of the Bond Company on December 31, 1987, disclosed the following with regard to merchandise inventory for 1987 and prior years:

1. December 31, 1983, inventory was correct.
2. December 31, 1984, inventory was understated \$30,000.
3. December 31, 1985, inventory was overstated \$21,000.
4. December 31, 1986, inventory was understated \$18,000.
5. December 31, 1987, inventory was correct.

The reported net income for each year was as follows:

1984 . . . . .	\$175,500
1985 . . . . .	213,000
1986 . . . . .	229,500
1987 . . . . .	210,000

**Required:** (Assume that the errors were not discovered until the end of 1987, so that no correcting entries have been made.)

- a. What is the correct net income for each of the four years—1984-87?
- b. What errors would have been included in each December 31 balance sheet? Assume each year's error is independent of the other years' errors.
- c. Comment on the implications of the corrected net income as contrasted with reported net income.

**P9-3-A****Maximize and minimize gross margin and net income using various cost-flow methods**

Sea-Surf Company sells the Ultra-Light model wind surfer. All of the Ultra-Lights are identical except for identifying serial numbers. Sea-Surf Company had three Ultra-Lights in its inventory on August 1, 1987, that cost \$5,600 each. During the month, the company purchased five Ultra-Lights from a dealer going out of business at \$5,200 each. On August 17, six units were purchased at \$5,800 each, and on August 28, six units were purchased at \$6,000 each.

Sea-Surf Company sold 13 Ultra-Lights in August at \$8,000 each. The company uses the specific identification method of accounting for its sales and purchases of Ultra-Lights.

**Required:**

- Compute the gross margin earned by the company in August if it shipped the units that would maximize gross margin and net income.
- Repeat part (a) assuming the company shipped the units that would minimize gross margin and net income.
- Do you think Sea-Surf Company should be permitted to use the specific identification method of accounting for Ultra-Lights in view of the manipulation possible as shown by your calculations in (a) and (b)?

**P9-4-A****Compute gross margin using Fifo and Lifo illustrating effects of end-of-year purchases**

Wright Company accounts for its inventory using the Lifo method under periodic procedure. Data on purchases, sales, and inventory for the year ended December 31, 1987, are:

Inventory, January 1 . . . 4,000 units @ \$7.50

## Purchases:

January 7 . . . . .	10,000 units @ \$ 9.00
July 7 . . . . .	20,000 units @ \$10.50
December 21 . . . . .	12,000 units @ \$12.00

During 1987, 32,000 units were sold for \$480,000, leaving an inventory on December 31, 1987, of 14,000 units.

**Required:**

- Compute the gross margin earned on sales during 1987.
- Compute the change in gross margin that would have resulted if the purchase of December 21 had been delayed until January 6, 1988.
- Recompute the gross margin that would have resulted if 18,000 units rather than 12,000 units had been purchased on December 21.
- Solve parts (a), (b), and (c) using the Fifo method.

**P9-5-A****Compute ending inventory under Fifo, Lifo, and weighted-average**

Following are data for the Maddox Company for the year 1987:

Inventory, January 1 . . . 700 @ \$5.20

## Purchases:

February 2 . . . . .	500 @ \$5.00
April 5 . . . . .	1,000 @ \$4.00
June 15 . . . . .	600 @ \$3.50
September 30 . . . . .	700 @ \$3.40
November 28 . . . . .	900 @ \$4.50

During the year, 3,300 units were sold. Periodic inventory procedure is used.

**Required:**

- Compute the ending inventory as of December 31, 1987, under each of the following methods: (1) Fifo, (2) Lifo, and (3) weighted-average.
- Give the journal entries to record the purchases for the year and necessary year-end entries to charge Income Summary with the cost of goods sold for the year under Fifo.

**P9-6-A****Compute cost of goods sold and gross margin under Fifo and Lifo**

The Oglesby Company was organized on January 1, 1985. Selected data for 1985-87 are as follows:

Year ended December 31	Inventory		Annual data	
	Fifo	Lifo	Purchases	Sales
1985 . . . . .	\$3,840	\$2,880	\$17,280	\$19,440
1986 . . . . .	4,800	3,360	14,400	22,800
1987 . . . . .	7,920	4,800	17,760	19,680

- Required:* a. Compute the cost of goods sold and gross margin for each of the three years 1985-87, using the Fifo method of inventory measurement.  
 b. Repeat part (a) using Lifo.

**P9-7-A**

**Compute difference in net income between Lifo and Fifo**

The Kerns Company determined its net income for the years 1986, 1987, and 1988 as \$408,000, \$392,400, and \$403,800, respectively, using the Fifo method of inventory measurement. Given below are ending inventories based on both the Fifo and Lifo methods:

	<i>December 31</i>	<i>Fifo</i>	<i>Lifo</i>
1985 . . . .	\$ 90,000	\$ 84,000	
1986 . . . .	103,200	94,800	
1987 . . . .	100,800	93,600	
1988 . . . .	109,800	100,200	

- Required:* Compute the net income that would have been reported in 1986, 1987, and 1988 by the Kerns Company had it used the Lifo method of inventory measurement.

**P9-8-A**

**Compute ending inventory using LCM**

<i>Item</i>	<i>Quantity</i>	<i>Unit cost</i>	<i>Unit market</i>
1 . . . .	4,200	\$2.00	\$1.95
2 . . . .	8,400	1.80	1.90
3 . . . .	2,800	1.75	1.80
4 . . . .	7,000	2.40	2.25
5 . . . .	5,600	2.25	2.30
6 . . . .	1,400	1.90	1.80

- Required:* a. Compute the ending inventory applying the lower-of-cost-or-market method to the total inventory.  
 b. What would be the ending inventory applying the lower-of-cost-or-market method on an item-by-item basis?

**P9-9-A**

**Estimate inventory using gross margin method**

The sales and cost of goods sold for the Chapman Company for the past five years were as follows:

<i>Year</i>	<i>Sales (net)</i>	<i>Cost of goods sold</i>
1982 . . . .	\$2,080,200	\$1,300,125
1983 . . . .	2,248,800	1,405,500
1984 . . . .	2,572,200	1,607,625
1985 . . . .	2,484,600	1,515,000
1986 . . . .	2,655,800	1,650,000

For the seven months ended July 31, 1987, the following information is available from the accounting records of the company:

Sales . . . . .	\$1,614,200
Purchases . . . . .	956,000
Purchase returns . . . . .	6,000
Sales returns . . . . .	36,200
Inventory, January 1, 1987 . . . . .	197,500

In order to secure a loan, the Chapman Company has been asked to present current financial statements. But the company does not wish to take a complete physical inventory as of July 31, 1987.

- Required:* a. Indicate how financial statements can be prepared without taking a complete physical inventory.  
 b. From the data given, compute the estimated inventory as of July 31, 1987.

**P9-10-A****Estimate ending inventory using retail inventory method**

The Moore Company records disclosed the following inventory information for 1986:

	<i>Cost</i>	<i>Retail</i>
Sales . . . . .	—	\$700,000
Purchases . . . . .	\$660,000	970,000
Purchase returns . . . . .	14,000	20,000
Transportation-in . . . . .	18,000	
Inventory, January 1 . . . . .	36,000	50,000

**Required:** Compute the estimated year-end inventory balance at cost using the retail method of inventory valuation.

**P9-11-A****Compute cost of goods sold using Fifo for both perpetual and periodic inventory procedure**

The inventory records of Tally Company show the following:

Jan. 1	Beginning inventory consists of 12 units costing \$10/unit.
5	Purchased 15 units @ \$10.40/unit.
10	Sold 9 units @ \$22.50/unit.
12	Sold 7 units @ \$22.50/unit.
20	Purchased 20 units @ \$10.45/unit.
22	Purchased 5 units @ \$10.00/unit.
30	Sold 20 units @ \$23.00/unit.

Assume all purchases and sales are made on account.

**Required:**

- Using perpetual Fifo inventory procedure, compute cost of goods sold for January.
- Using perpetual Fifo inventory procedure, prepare the journal entries for the month of January.
- Compute the cost of goods sold under periodic Fifo inventory procedure. Is there a difference between the amount computed using the two different methods?

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**PROBLEMS, SERIES B**

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**P9-1-B****Determine effects of inventory errors**

Thornton Company reported net income of \$476,800 for 1987, \$495,200 for 1988, and \$434,400 for 1989, using the incorrect inventory amounts shown for December 31, 1987, and 1988. The correct inventory amounts for those dates are also given. The correct December 31, 1989, inventory amount was used in calculating 1989 net income.

	<i>Incorrect</i>	<i>Correct</i>
December 31, 1987 . . . . .	\$ 96,800	\$113,600
December 31, 1988 . . . . .	112,000	93,600

**Required:** Prepare a schedule that shows: (1) the reported net income for each year in one column, (2) the amount of correction needed for each year in a second column, and (3) the correct net income for each year in a third column.

**P9-2-B****Determine effects of inventory errors**

As of December 31, 1987, the financial records of the Parsons Company were examined for the years ended December 31, 1984, 1985, 1986, and 1987. With regard to the inventory, the examination disclosed the following:

- December 31, 1983, inventory was correct.
- December 31, 1984, inventory was overstated \$45,000.
- December 31, 1985, inventory was overstated \$22,500.
- December 31, 1986, inventory was understated \$49,500.
- December 31, 1987, inventory was correct.

The reported net income for each year was:

1984 . . . . .	\$ 86,400
1985 . . . . .	122,400
1986 . . . . .	150,750
1987 . . . . .	190,350

**Required:** (Assume that the errors were not discovered until the end of 1987, so no correcting entries have been made.)

- What is the correct net income for each of the four years—1984–87?
- What error(s) would have been included in each December 31 balance sheet? Assume each year's error is independent of the other years' errors.
- Comment on the implications of your corrected net income as contrasted with reported net income.

### P9-3-B

#### Maximize and minimize gross margin and net income using various cost-flow methods

The Chip Company sells home computers. It uses the specific identification method to account for its inventory. As of November 30, 1987, the company has 23 Orange III model home computers on hand which were acquired on the following dates and at the stated costs:

July 3 . . . . .	5 @ \$3,200
September 10 . . . . .	10 @ \$3,000
November 29 . . . . .	8 @ \$3,500

Chip sold 18 Orange III computers at \$4,600 each in December. There were no purchases of this model in December.

**Required:**

- Calculate gross margin on December sales of Orange III computers assuming the company shipped those units that would maximize reported gross margin.
- Repeat part (a) assuming the company shipped those units that would minimize reported gross margin for December.
- In view of your answers to parts (a) and (b), what would be your reaction to an assertion that the specific identification method should not be considered an acceptable method for costing inventory?

### P9-4-B

#### Compute gross margin using LIFO and FIFO illustrating effects of end-of-year purchases

The Salter Company accounts for a certain product that it handles using periodic LIFO inventory procedure. Data relative to this product for the year ended December 31, 1987, are:

Inventory January 1, 3,000 units @ \$12

	Purchases	Sales
January 5 . . . . .	6,000 @ \$15	January 10 . . . . .
March 31 . . . . .	18,000 @ \$18	April 2 . . . . .
August 12 . . . . .	12,000 @ \$22.50	August 22 . . . . .
December 26 . . . . .	6,000 @ \$24	December 24 . . . . .

**Required:**

- Compute the gross margin earned on sales of this product for 1987.
- Repeat part (a) assuming that the December 26 purchase was made in January of 1988.
- Recompute the gross margin assuming that 10,000 rather than 6,000 units were purchased on December 26.
- Solve parts (a), (b) and (c) using the FIFO method.

### P9-5-B

#### Compute ending inventory under FIFO, LIFO, and weighted-average

The purchases and sales of a certain product for the Cutter Company for April 1987 are shown below. There was no inventory on April 1.

	Purchases	Sales
April 3 . . . . .	2,000 units @ \$7.00	April 4 . . . . .
April 10 . . . . .	1,600 units @ \$7.20	April 11 . . . . .
April 22 . . . . .	3,200 units @ \$6.60	April 16 . . . . .
April 28 . . . . .	1,800 units @ \$6.80	April 26 . . . . .
		800
		April 30 . . . . .
		1,200

- Required:**
- Using periodic procedure, compute the ending inventory of the above product as of April 30 under each of the following methods: (1) Fifo, (2) Lifo, and (3) weighted-average.
  - Give the journal entries to record the purchases and the necessary year-end entries to charge Income Summary with the cost of goods sold for the month under both Fifo and Lifo.

**P9-6-B**

**Compute ending inventory and cost of goods sold using Fifo and Lifo**

Listed below are the purchases and sales of a certain product made by the Fairfield Company during 1987 and 1988. The company had 30,000 units of this product on hand at January 1, 1987, with a cost of \$2.50 per unit.

	<i>Purchases</i>	<i>Sales</i>
1987		1987
February 20 . . .	6,000 @ \$2.50	February 2 . . . 9,000 @ \$3.50
April 18 . . .	15,000 @ \$2.45	April 23 . . . 12,000 @ \$3.00
August 28 . . .	15,000 @ \$2.40	September 3 . . . 12,000 @ \$2.90
December 22 . . .	12,000 @ \$2.42	December 24 . . . 10,500 @ \$2.95
1988		1988
January 26 . . .	9,000 @ \$2.50	January 7 . . . 7,500 @ \$3.00
March 6 . . .	15,000 @ \$2.50	March 21 . . . 12,000 @ \$3.10
August 12 . . .	9,000 @ \$2.60	September 8 . . . 7,500 @ \$3.10
November 15 . . .	12,000 @ \$2.70	December 2 . . . 13,500 @ \$3.25

The company uses periodic inventory procedure.

**Required:**

- Compute the cost of the ending inventory and the cost of goods sold for both years assuming the use of the Fifo method of inventory measurement.
- Repeat (a) above using the Lifo method.

**P9-7-B**

**Compute difference in net income between Lifo and Fifo**

Given below are the inventory amounts under Fifo and Lifo for the Bibb Company:

<i>December 31</i>	<i>Fifo</i>	<i>Lifo</i>
1986 . . .	\$240,000	\$196,000
1987 . . .	248,000	232,000
1988 . . .	276,000	272,000

The Bibb Company has used the Fifo method of inventory measurement and reported net income of \$660,000 in 1987 and \$680,000 in 1988.

**Required:**

State the amount of net income that the company would have reported in 1987 and 1988 if it had used the Lifo method rather than Fifo.

**P9-8-B**

**Compute ending inventory using LCM**

The accountant for the Goldberg Company prepared the following schedule of the company's inventory at December 31, 1987, and used the lower of the total cost or total market value in determining cost of goods sold.

<i>Item</i>	<i>Quantity</i>	<i>Unit cost</i>	<i>Unit market</i>	<i>Total cost</i>	<i>Total market</i>
Q . . . . .	4,200	\$3.00	\$3.00		
R . . . . .	2,400	2.50	2.40		
S . . . . .	5,400	2.00	1.90		
T . . . . .	4,800	1.75	1.80		

**Required:**

- State whether this is an acceptable method of inventory measurement, and determine the amounts computed.
- Compute the amount of the ending inventory using the lower-of-cost-or-market method on an item-by-item basis.
- State the effect on net income in 1987 if the method in (b) was used rather than the method in (a).

## PART 3 Assets and Liabilities

## P9-9-B

**Estimate inventory using gross margin method**

As part of a loan agreement with a local bank, the Hudson Company must present quarterly and cumulative income statements for the year 1987. The company uses periodic inventory procedure and marks its merchandise to sell at a price that will yield a gross margin of 30%. Selected data for the first six months of 1987 are as follows:

	First quarter	Second quarter
Sales	\$310,000	\$320,000
Purchases	200,000	230,000
Purchase returns and allowances	12,000	14,000
Purchase discounts	4,000	4,400
Sales returns and allowances	10,000	6,000
Transportation-in	10,000	10,400
Selling expenses	32,000	30,000
Administrative expenses	12,000	10,000

The cost of the physical inventory taken December 31, 1986, was \$38,000.

*Required:*

- Indicate how income statements may be prepared without taking a physical inventory at the end of each of the first two quarters of 1987.
- Prepare income statements for the first quarter, the second quarter, and the first six months of 1987.

## P9-10-B

**Estimate ending inventory using retail inventory method**

The Roberts Company records show the following information:

	Cost	Retail
Sales	—	\$584,000
Purchases	\$450,000	700,000
Transportation-in	43,800	—
Inventory, January 1	20,000	29,000
Purchase returns	25,200	31,000

Compute the year-end inventory balance at cost using the retail method of estimating inventory.

*Required:*

The inventory records of Monroe Company show the following:

- Mar. 1 Beginning inventory consists of 12 units costing \$10/unit.
- 3 Sold 6 units at \$23.50/unit.
  - 10 Purchased 20 units at \$12.00/unit.
  - 12 Sold 10 units at \$24.00/unit.
  - 20 Sold 9 units at \$24.00/unit.
  - 25 Purchased 20 units at \$12.50/unit.
  - 31 Sold 10 units at \$24.00/unit.

Assume all sales and purchases are made on credit.

*Required:* Using perpetual Fifo inventory procedure, prepare the appropriate journal entries for the month of March.

**BUSINESS DECISION PROBLEM 9-1****9-1****Determine tax effects of Fifo, Lifo, and weighted-average**

The Jackson Company, which began operations on January 2, 1987, sells a single product, product X. Purchases for the year were:

January 2	1,500 at \$4.00
February 15	2,400 at \$4.00
April 8	3,000 at \$4.15
June 6	1,200 at \$4.25
August 19	2,400 at \$4.30
October 5	1,800 at \$4.50
November 22	1,200 at \$4.80

Periodic inventory procedure is used. On December 31, a physical inventory shows 2,400 units on hand.

Mr. Jackson is trying to decide which of the following inventory costing methods he should adopt for tax purposes: Fifo, Lifo, or weighted-average. Since Mr. Jackson is short of cash, he wants to minimize the amount of income taxes payable.

**Required:** What will be the cost of goods sold and the cost of the ending inventory under this method? Which of the three inventory costing methods will minimize Mr. Jackson's net income (and income taxes)?

**BUSINESS DECISION PROBLEM 9-2****9-2****Determine insurance settlement using gross margin method**

Anne Ferrell owns and operates a sporting goods store. On February 2, 1987, the store suffered extensive fire damage, and all of the inventory was destroyed. Ms. Ferrell uses periodic inventory procedure and has the following information in her accounting records, which were undamaged:

Inventory, January 1 . . . \$ 60,000

Purchases:

January 8	24,000
January 20	36,000
January 30	48,000

Net sales:

During January	180,000
February 1 and 2	12,000

Ms. Ferrell also knows that her gross margin rate on net sales has been 40% for the past three years. Ms. Ferrell's insurance company has offered to pay \$42,000 to settle her inventory loss unless she can show that she suffered a greater loss.

**Required:** Should Ms. Ferrell settle for \$42,000? If not, how can she show that she suffered a greater loss? What is the estimated loss?

① ~~trial balance deb or s~~ ~~or~~ ~~side~~ ~~101~~  
 entry ~~for 2001~~ ~~2001~~ ~~for~~ ~~2001~~ ~~side~~ ~~101~~  
~~25,102~~ ~~side - 6~~ ~~wrong balance 2001~~  
~~on 2001~~ ~~complete 2001~~