

CHAPTER 9

Inventories: Additional Valuation Issues

ASSIGNMENT CLASSIFICATION TABLE (BY TOPIC)

Topics	Questions	Brief Exercises	Exercises	Problems	Concepts for Analysis
1. Lower of cost or market.	1, 2, 3, 4, 5, 6	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2, 3, 9, 10	1, 2, 3
2. Inventory accounting changes; relative sales value method; net realizable value.	7, 8	4	7, 8	7, 11	4
3. Purchase commitments.	9	5, 6	9, 10	9	
4. Gross profit method.	10, 11, 12, 13	7	11, 12, 13, 14, 15, 16, 17	4, 5	
5. Retail inventory method.	14, 15, 16	8	18, 19, 20, 22, 23, 26	6, 7, 8, 10, 11	4, 5, 6
6. Presentation and analysis.	17, 18	9	21	9	
*7. LIFO retail.	19	10	22, 23	12, 13, 14	7
*8. Dollar-value LIFO retail.		11	24, 25, 26, 27	11, 13	
*9. Special LIFO problems.			28	13, 14	

*This material is discussed in an Appendix to the chapter.

ASSIGNMENT CLASSIFICATION TABLE (BY LEARNING OBJECTIVE)

Learning Objectives	Brief Exercises	Exercises	Problems
1. Describe and apply the lower-of-cost-or market rule.	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2, 3, 9, 10
2. Explain when companies value inventories at net realizable value.	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2, 3, 9, 10
3. Explain when companies use the relative sales value method to value inventories.	4	7, 8	
4. Discuss accounting issues related to purchase commitments.	5, 6	9, 10	9
5. Determine ending inventory by applying the gross profit method.	7	11, 12, 13, 14, 15, 16, 17	4, 5
6. Determine ending inventory by applying the retail inventory method.	8	18, 19, 20	6, 7, 8
7. Explain how to report and analyze inventory.	9	21	9
*8. Determine ending inventory by applying the LIFO retail methods.	10, 11	22, 23, 24, 25, 26, 27, 28	11, 12, 13, 14

*This material is discussed in an Appendix to the chapter.

ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E9-1	Lower-of-cost-or-market.	Simple	15–20
E9-2	Lower-of-cost-or-market.	Simple	10–15
E9-3	Lower-of-cost-or-market.	Simple	15–20
E9-4	Lower-of-cost-or-market—journal entries.	Simple	10–15
E9-5	Lower-of-cost-or-market—valuation account.	Moderate	20–25
E9-6	Lower-of-cost-or-market—error effect.	Simple	10–15
E9-7	Relative sales value method.	Simple	15–20
E9-8	Relative sales value method.	Simple	12–17
E9-9	Purchase commitments.	Simple	05–10
E9-10	Purchase commitments.	Simple	15–20
E9-11	Gross profit method.	Simple	8–13
E9-12	Gross profit method.	Simple	10–15
E9-13	Gross profit method.	Simple	15–20
E9-14	Gross profit method.	Moderate	15–20
E9-15	Gross profit method.	Simple	10–15
E9-16	Gross profit method.	Simple	15–20
E9-17	Gross profit method.	Moderate	20–25
E9-18	Retail inventory method.	Moderate	20–25
E9-19	Retail inventory method.	Simple	12–17
E9-20	Retail inventory method.	Simple	20–25
E9-21	Analysis of inventories.	Simple	10–15
*E9-22	Retail inventory method—conventional and LIFO.	Moderate	25–35
*E9-23	Retail inventory method—conventional and LIFO.	Moderate	15–20
*E9-24	Dollar-value LIFO retail.	Simple	10–15
*E9-25	Dollar-value LIFO retail.	Simple	5–10
*E9-26	Conventional retail and dollar-value LIFO retail.	Moderate	20–25
*E9-27	Dollar-value LIFO retail.	Moderate	20–25
*E9-28	Change to LIFO retail.	Simple	10–15
P9-1	Lower-of-cost-or-market.	Simple	10–15
P9-2	Lower-of-cost-or-market.	Moderate	25–30
P9-3	Entries for lower-of-cost-or-market—direct and allowance.	Moderate	30–35
P9-4	Gross profit method.	Moderate	20–30
P9-5	Gross profit method.	Complex	40–45
P9-6	Retail inventory method.	Moderate	20–30
P9-7	Retail inventory method.	Moderate	20–30

ASSIGNMENT CHARACTERISTICS TABLE (Continued)

Item	Description	Level of Difficulty	Time (minutes)
P9-8	Retail inventory method.	Moderate	20–30
P9-9	Statement and note disclosure, LCM, and purchase commitment.	Moderate	30–40
P9-10	Lower of cost or market.	Moderate	30–40
*P9-11	Conventional and dollar-value LIFO retail.	Moderate	30–35
*P9-12	Retail, LIFO retail, and inventory shortage.	Moderate	30–40
*P9-13	Change to LIFO retail.	Moderate	30–40
*P9-14	Change to LIFO retail; dollar-value LIFO retail.	Complex	40–50
CA9-1	Lower-of-cost-or-market.	Moderate	15–25
CA9-2	Lower-of-cost-or-market.	Moderate	20–30
CA9-3	Lower-of-cost-or-market.	Moderate	15–20
CA9-4	Retail inventory method.	Moderate	25–30
CA9-5	Cost determination, LCM, retail method.	Moderate	15–25
CA9-6	Purchase commitment.	Moderate	20–25
*CA9-7	Retail inventory method and LIFO retail.	Simple	10–15

ANSWERS TO QUESTIONS

1. Where there is evidence that the utility of goods to be disposed of in the ordinary course of business will be less than cost, the difference should be recognized as a loss in the current period, and the inventory should be stated at market value in the financial statements.
2. The upper (ceiling) and lower (floor) limits for the value of the inventory are intended to prevent the inventory from being reported at an amount in excess of the net realizable value or at an amount less than the net realizable value less a normal profit margin. The maximum limitation, not to exceed the net realizable value (ceiling) covers obsolete, damaged, or shopworn material and prevents overstatement of inventories and understatement of the loss in the current period. The minimum limitation deters understatement of inventory and overstatement of the loss in the current period.
3. The usual basis for carrying forward the inventory to the next period is cost. Departure from cost is required, however, when the utility of the goods included in the inventory is less than their cost. This loss in utility should be recognized as a loss of the current period, the period in which it occurred. Furthermore, the subsequent period should be charged for goods at an amount that measures their expected contribution to that period. In other words, the subsequent period should be charged for inventory at prices no higher than those which would have been paid if the inventory had been obtained at the beginning of that period. (Historically, the lower of cost or market rule arose from the accounting convention of providing for all losses and anticipating no profits.)

In accordance with the foregoing reasoning, the rule of “cost or market, whichever is lower” may be applied to each item in the inventory, to the total of the components of each major category, or to the total of the inventory, whichever most clearly reflects operations. The rule is usually applied to each item, but if individual inventory items enter into the same category or categories of finished product, alternative procedures are suitable.

The arguments against the use of the lower of cost or market method of valuing inventories include the following:

- (1) The method requires the reporting of estimated losses (all or a portion of the excess of actual cost over replacement cost) as definite income charges even though the losses have not been sustained to date and may never be sustained. Under a consistent criterion of realization a drop in replacement cost below original cost is no more a sustained loss than a rise above cost is a realized gain.
- (2) A price shrinkage is brought into the income statement before the loss has been sustained through sale. Furthermore, if the charge for the inventory write-downs is not made to a special loss account, the cost figure for goods actually sold is inflated by the amount of the estimated shrinkage in price of the unsold goods. The title “Cost of Goods Sold” therefore becomes a misnomer.
- (3) The method is inconsistent in application in a given year because it recognizes the propriety of implied price reductions but gives no recognition in the accounts or financial statements to the effect of the price increases.
- (4) The method is also inconsistent in application in one year as opposed to another because the inventory of a company may be valued at cost in one year and at market in the next year.
- (5) The lower of cost or market method values the inventory in the balance sheet conservatively. Its effect on the income statement, however, may be the opposite. Although the income statement for the year in which the unsustained loss is taken is stated conservatively, the net income on the income statement of the subsequent period may be distorted if the expected reductions in sales prices do not materialize.

Questions Chapter 9 (Continued)

(6) In the application of the lower of cost or market rule a prospective “normal profit” is used in determining inventory values in certain cases. Since “normal profit” is an estimated figure based upon past experiences (and might not be attained in the future), it is not objective in nature and presents an opportunity for manipulation of the results of operations.

4. The lower of cost or market rule may be applied directly to each item or to the total of the inventory (or in some cases, to the total of the components of each major category). The method should be the one that most clearly reflects income. The most common practice is to price the inventory on an item-by-item basis. Companies favor the individual item approach because tax requirements require that an individual item basis be used unless it involves practical difficulties. In addition, the individual item approach gives the most conservative valuation for balance sheet purposes.
5.
 1. \$14.30.
 2. \$16.10.
 3. \$13.75.
 4. \$9.70.
 5. \$15.90.
6. One approach is to record the inventory at cost and then reduce it to market, thereby reflecting a loss in the current period (often referred to as the indirect method). The loss would then be shown as a separate item in the income statement and the cost of goods sold for the year would not be distorted by its inclusion. An objection to this method of valuation is that an inconsistency is created between the income statement and balance sheet. In attempting to meet this inconsistency some have advocated the use of a special account to receive the credit for such an inventory write-down, such as Allowance to Reduce Inventory to Market which is a contra account against inventory on the balance sheet. It should be noted that the disposition of this account presents problems to accountants.

Another approach is merely to substitute market for cost when pricing the new inventory (often referred to as the direct method). Such a procedure increases cost of goods sold by the amount of the loss and fails to reflect this loss separately. For this reason, many theoretical objections can be raised against this procedure.

7. An exception to the normal recognition rule occurs where (1) there is a controlled market with a quoted price applicable to specific commodities and (2) no significant costs of disposal are involved. Certain agricultural products and precious metals which are immediately marketable at quoted prices are often valued at net realizable value (market price).
8. Relative sales value is an appropriate basis for pricing inventory when a group of varying units is purchased at a single lump sum price (basket purchase). The purchase price must be allocated in some manner or on some basis among the various units. When the units vary in size, character, and attractiveness, the basis for allocation must reflect both quantitative and qualitative aspects. A suitable basis then is the relative sales value of the units that comprise the inventory.
9. The drop in the market price of the commitment should be charged to operations in the current year if it is material in amount. The following entry would be made $[(\$6.40 - \$5.90) \times 150,000] = \$75,000$:

Unrealized Holding Gain or Loss—Income (Purchase Commitments)	75,000	
Estimated Liability on Purchase Commitments		75,000

The entry is made because a loss in utility has occurred during the period in which the market decline took place. The account credited in the above entry should be included among the current liabilities on the balance sheet with an appropriate note indicating the nature and extent of the commitment. This liability indicates the minimum obligation on the commitment contract at the present time—the amount that would have to be forfeited in case of breach of contract.

Questions Chapter 9 (Continued)

10. The major uses of the gross profit method are: (1) it provides an approximation of the ending inventory which the auditor might use for testing validity of physical inventory count; (2) it means that a physical count need not be taken every month or quarter; and (3) it helps in determining damages caused by casualty when inventory cannot be counted.
11. Gross profit as a percentage of sales indicates that the margin is based on selling price rather than cost; for this reason the gross profit as a percentage of selling price will always be lower than if based on cost. Conversions are as follows:

20% on cost =	16 2/3% on selling price
33 1/3% on cost =	25% on selling price
33 1/3% on selling price =	50% on cost
60% on selling price =	150% on cost

12. A markup of 25% on cost equals a 20% markup on selling price; therefore, gross profit equals \$1,200,000 (\$6 million X 20%) and net income equals \$300,000 [\$1,200,000 – (15% X \$6 million)].

The following formula was used to compute the 20% markup on selling price:

$$\text{Gross profit on selling price} = \frac{\text{Percentage markup on cost}}{100\% + \text{Percentage markup on cost}} = \frac{.25}{1 + .25} = 20\%$$

13. Inventory, January 1, 2008		\$ 400,000
Purchases to February 10, 2008	\$1,140,000	
Freight-in to February 10, 2008	<u>60,000</u>	<u>1,200,000</u>
Merchandise available		1,600,000
Sales to February 10, 2008	1,750,000	
Less gross profit at 40%	<u>700,000</u>	
Sales at cost		<u>1,050,000</u>
Inventory (approximately) at February 10, 2008		<u>\$ 550,000</u>

14. The validity of the retail inventory method is dependent upon (1) the composition of the inventory remaining approximately the same at the end of the period as it was during the period, and (2) there being approximately the same rate of markup at the end of the year as was used throughout the period.

The retail method, though ordinarily applied on a departmental basis, may be appropriate for the business as a unit if the above conditions are met.

15. The conventional retail method is a statistical procedure based on averages whereby inventory figures at retail are reduced to an inventory valuation figure by multiplying the retail figures by a percentage which is the complement of the markup percent.

To determine the markup percent, original markups and additional net markups are related to the original cost. The complement of the markup percent so determined is then applied to the inventory at retail after the latter has been reduced by net markdowns, thus in effect achieving a lower of cost or market valuation.

An example of reduction to market follows:

Assume purchase of 100 items at \$1 each, marked to sell at \$1.50 each, at which price 80 were sold. The remaining 20 are marked down to \$1.15 each.

The inventory at \$15.33 is \$4.67 below original cost and is valued at an amount which will produce the “normal” 33 1/3% gross profit if sold at the present retail price of \$23.00.

Questions Chapter 9 (Continued)

Computation of Inventory

	<u>Cost</u>	<u>Retail</u>	<u>Ratio</u>
Purchases	<u>\$100</u>	\$150	66 2/3%
Sales		(120)	
Markdowns (20 X \$.35)		<u>(7)</u>	
Inventory at retail		<u>\$ 23</u>	
Inventory at lower of cost or market	\$23 X 66 2/3% = <u>\$15.33</u>		

16. (a) Ending inventory:

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 149,000	\$ 283,500
Purchases	1,400,000	2,160,000
Freight-in	<u>70,000</u>	<u>0</u>
Totals	1,619,000	2,443,500
Add net markups		<u>92,000</u>
	<u>\$1,619,000</u>	2,535,500
Deduct net markdowns		<u>48,000</u>
		2,487,500
Deduct sales		<u>2,235,000</u>
Ending inventory, at retail		<u>\$ 252,500</u>

Ratio of cost to selling price $\frac{\$1,619,000}{\$2,535,500} = 64\%$.

Ending inventory estimated at cost = 64% X \$252,500 = \$161,600.

(b) The retail method, above, showed an ending inventory at retail of \$252,500; therefore, merchandise not accounted for amounts to \$12,500 (\$252,500 – \$240,000) at retail and \$8,000 (\$12,500 X .64) at cost.

17. Information relative to the composition of the inventory (i.e., raw material, work-in-process, and finished goods); the inventory financing where significant or unusual (transactions with related parties, product financing arrangements, firm purchase commitments, involuntary liquidations of LIFO inventories, pledging inventories as collateral); and the inventory costing methods employed (lower of cost or market, FIFO, LIFO, average cost) should be disclosed. Because Deere Company uses LIFO, it should also report the LIFO RESERVE.
18. Inventory turnover measures how quickly inventory is sold. Generally, the higher the inventory turnover, the better the enterprise is performing. The more times the inventory turns over, the smaller the net margin can be to earn an appropriate total profit and return on assets. For example, a company can price its goods lower if it has a high inventory turnover. A company with a low profit margin, such as 2%, can earn as much as a company with a high net profit margin, such as 40%, if its inventory turnover is often enough. To illustrate, a grocery store with a 2% profit margin can earn as much as a jewelry store with a 40% profit margin and an inventory turnover of 1 if its turnover is more than 20 times.
- *19. Two major modifications are necessary. First, the beginning inventory should be excluded from the numerator and denominator of the cost to retail percentage and second, markdowns should be included in the denominator of the cost to retail percentage.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 9-1

- (a) Ceiling \$198.00 (\$217 – \$19)
 Floor \$166.00 (\$217 – \$19 – \$32)

(b) \$106.00

(c) \$51.00

BRIEF EXERCISE 9-2

Item	Cost	Designated Market	LCM
Jokers	\$2,000	\$1,900	\$1,900
Penguins	5,000	4,950	4,950
Riddlers	4,400	4,550	4,400
Scarecrows	3,200	3,070	3,070

BRIEF EXERCISE 9-3

(a) Direct method

Cost of Goods Sold.....	17,000	
Inventory		17,000

(b) Indirect method

Loss Due to Market Decline of Inventory	17,000	
Allowance to Reduce Inventory to Market.....		17,000

BRIEF EXERCISE 9-4

<u>Group</u>	<u>Number of CDs</u>	<u>Sales Price per CD</u>	<u>Total Sales Price</u>	<u>Relative Sales Price</u>	<u>Total Cost</u>	<u>Cost Allocated to CDs</u>	<u>Cost per CD</u>
1	100	\$ 5	\$ 500	5/100*	X \$6,000 =	\$ 300	\$3**
2	800	\$10	8,000	80/100	X \$6,000 =	4,800	\$6
3	100	\$15	<u>1,500</u>	15/100	X \$6,000 =	<u>900</u>	\$9
			<u>\$10,000</u>			<u>\$6,000</u>	

*\$500/\$10,000 = 5/100

**\$300/100 = \$3

BRIEF EXERCISE 9-5

Unrealized Holding Loss—Income (Purchase Commitments)	70,000	
Estimated Liability on Purchase Commitments.....		70,000

BRIEF EXERCISE 9-6

Purchases (Inventory)	930,000	
Estimated Liability on Purchase Commitments	70,000	
Cash.....		1,000,000

BRIEF EXERCISE 9-7

Beginning inventory		\$150,000
Purchases		<u>500,000</u>
Cost of goods available		650,000
Sales	\$700,000	
Less gross profit (31% X 700,000)	<u>217,000</u>	
Estimated cost of goods sold		<u>483,000</u>
Estimated ending inventory destroyed in fire		<u>\$167,000</u>

BRIEF EXERCISE 9-8

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 12,000	\$ 20,000
Net purchases	120,000	170,000
Net markups	<u> </u>	<u>10,000</u>
Totals	<u>\$132,000</u>	200,000
Deduct:		
Net markdowns		7,000
Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

Cost-to-retail ratio: $\$132,000 \div \$200,000 = \underline{66\%}$

Ending inventory at lower of cost or market ($66\% \times \$36,000$) = \$23,760

BRIEF EXERCISE 9-9

Inventory turnover:

$$\frac{\$198,747}{\frac{\$26,612 + \$24,401}{2}} = 7.79 \text{ times}$$

Average days to sell inventory:

$$365 \div 7.79 = 46.9 \text{ days}$$

***BRIEF EXERCISE 9-10**

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	<u>\$ 12,000</u>	<u>\$ 20,000</u>
Net purchases	120,000	170,000
Net markups		10,000
Net markdowns		<u>(7,000)</u>
Total (excluding beginning inventory)	<u>120,000</u>	<u>173,000</u>
Total (including beginning inventory)	<u>\$132,000</u>	193,000
Deduct: Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

Cost-to-retail ratio: $\$120,000 \div \$173,000 = \underline{69.4\%}$

Ending inventory at cost

$\$20,000 \times 60\% (\$12,000/\$20,000) = \$12,000$	
<u>16,000</u> $\times 69.4\%$	<u>= 11,104</u>
<u>\$36,000</u>	<u>\$23,104</u>

***BRIEF EXERCISE 9-11**

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	<u>\$ 12,000</u>	<u>\$ 20,000</u>
Net purchases	120,000	170,000
Net markups		10,000
Net markdowns		<u>(7,000)</u>
Total (excluding beginning inventory)	<u>120,000</u>	<u>173,000</u>
Total (including beginning inventory)	<u>\$132,000</u>	193,000
Deduct: Sales		<u>157,000</u>
Ending inventory at retail		<u>\$ 36,000</u>

***BRIEF EXERCISE 9-11 (Continued)**

Cost-to-retail ratio: $\$120,000 \div \$173,000 = \underline{69.4\%}$

Ending inventory at retail deflated to base year prices

$$\mathbf{\$36,000 \div 1.20 = \underline{\$30,000}}$$

Ending inventory at cost

$$\mathbf{\$20,000 \times 100\% \times 60\% = \$12,000}$$

$$\mathbf{10,000 \times 120\% \times 69.4\% = \underline{8,328}}$$

$$\mathbf{\underline{\underline{\$20,328}}}$$

SOLUTIONS TO EXERCISES

EXERCISE 9-1 (15–20 minutes)

Part No.	Quantity	Per Unit		Total Cost	Total Market	Lower of Cost or Market
		Cost	Market			
110	600	\$ 90	\$100.00	\$ 54,000	\$ 60,000	\$ 54,000
111	1,000	60	52.00	60,000	52,000	52,000
112	500	80	76.00	40,000	38,000	38,000
113	200	170	180.00	34,000	36,000	34,000
120	400	205	208.00	82,000	83,200	82,000
121	1,600	16	0.20	25,600	320	320
122	300	240	235.00	72,000	70,500	70,500
Totals				<u>\$367,600</u>	<u>\$340,020</u>	<u>\$330,820</u>

(a) \$330,820.

(b) \$340,020.

EXERCISE 9-2 (10–15 minutes)

Item	Net Realizable Value (Ceiling)	Net Realizable Value Less Normal Profit (Floor)	Replacement Cost	Designated Market	Cost	LCM
D	\$90*	\$70**	\$120	\$90	\$75	\$75
E	80	60	72	72	80	72
F	65	45	70	65	80	65
G	65	45	30	45	80	45
H	80	60	70	70	50	50
I	60	40	30	40	36	36

*Estimated selling price – Estimated selling expense = \$120 – \$30 = \$90.

**Net realizable value – Normal profit margin = \$90 – \$20 = \$70.

EXERCISE 9-3 (15–20 minutes)

Item No.	Cost per Unit	Replacement Cost	Net Realizable Value	Net Real. Value Less Normal Profit	Designated Market Value	Quantity	Final Inventory Value
1320	\$3.20	\$3.00	\$4.15*	\$2.90**	\$3.00	1,200	\$ 3,600
1333	2.70	2.30	3.00	2.50	2.50	900	2,250
1426	4.50	3.70	4.60	3.60	3.70	800	2,960
1437	3.60	3.10	2.95	2.05	2.95	1,000	2,950
1510	2.25	2.00	2.45	1.85	2.00	700	1,400
1522	3.00	2.70	3.40	2.90	2.90	500	1,450
1573	1.80	1.60	1.75	1.25	1.60	3,000	4,800
1626	4.70	5.20	5.50	4.50	5.20	1,000	<u>4,700***</u>
							<u>\$24,110</u>

*\$4.50 – \$.35 = \$4.15.

**\$4.15 – \$1.25 = \$2.90.

***Cost is used because it is lower than designated market value.

EXERCISE 9-4 (10–15 minutes)

(a)	12/31/07	Cost of Goods Sold	19,000	
		Inventory		19,000
	12/31/08	Cost of Goods Sold	15,000	
		Inventory		15,000
(b)	12/31/07	Loss Due to Market Decline of Inventory	19,000	
		Allowance to Reduce Inventory to Market		19,000
	12/31/08	Allowance to Reduce Inventory to Market	4,000*	
		Recovery of Loss Due to Market Decline of Inventory		4,000

EXERCISE 9-4 (Continued)

*Cost of inventory at 12/31/07	\$346,000
Lower of cost or market at 12/31/07	<u>(327,000)</u>
Allowance amount needed to reduce inventory to market (a)	<u>\$ 19,000</u>
Cost of inventory at 12/31/08	\$410,000
Lower of cost or market at 12/31/08	<u>(395,000)</u>
Allowance amount needed to reduce inventory to market (b)	<u>\$ 15,000</u>

Recovery of previously recognized loss = (a) – (b)
 = \$19,000 – \$15,000
 = \$4,000.

(c) Both methods of recording lower of cost or market adjustments have the same effect on net income.

EXERCISE 9-5 (20–25 minutes)

(a)	February	March	April
Sales	<u>\$29,000</u>	<u>\$35,000</u>	<u>\$40,000</u>
Cost of goods sold			
Inventory, beginning	15,000	15,100	17,000
Purchases	<u>20,000</u>	<u>24,000</u>	<u>26,500</u>
Cost of goods available	35,000	39,100	43,500
Inventory, ending	<u>15,100</u>	<u>17,000</u>	<u>13,000</u>
Cost of goods sold	<u>19,900</u>	<u>22,100</u>	<u>30,500</u>
Gross profit	9,100	12,900	9,500
Gain (loss) due to market fluctuations of inventory*	<u>(2,000)</u>	<u>1,100</u>	<u>700</u>
	<u>\$ 7,100</u>	<u>\$14,000</u>	<u>\$10,200</u>

EXERCISE 9-5 (Continued)

*	<u>Jan. 31</u>	<u>Feb. 28</u>	<u>Mar. 31</u>	<u>Apr. 30</u>
Inventory at cost	\$15,000	\$15,100	\$17,000	\$13,000
Inventory at the lower of cost or market	<u>14,500</u>	<u>12,600</u>	<u>15,600</u>	<u>12,300</u>
Allowance amount needed to reduce inventory to market	<u>\$ 500</u>	<u>\$ 2,500</u>	<u>\$ 1,400</u>	<u>\$ 700</u>
Gain (loss) due to market fluctuations of inventory**		<u>\$ (2,000)</u>	<u>\$ 1,100</u>	<u>\$ 700</u>
**\$500 – \$2,500 = \$(2,000)				
\$2,500 – \$1,400 = \$1,100				
\$1,400 – \$700 = \$700				

(b)	Jan. 31	Loss Due to Market Decline of Inventory Allowance to Reduce Inventory to Market	500	500
	Feb. 28	Loss Due to Market Decline of Inventory Allowance to Reduce Inventory to Market	2,000	2,000
	Mar. 31	Allowance to Reduce Inventory to Market..... Recovery of Loss Due to Market Decline of Inventory	1,100	1,100
	Apr. 30	Allowance to Reduce Inventory to Market..... Recovery of Loss Due to Market Decline of Inventory	700	700

EXERCISE 9-6

Net realizable value (ceiling)	$\$45 - \$14 = \$31$	
Net realizable value less normal profit (floor)	$\$31 - \$9 = \$22$	
Replacement cost	$\$35$	
Designated market	$\$31$	Ceiling
Cost	$\$40$	
Lower of cost or market	$\$31$	

$\$35$ figure used – $\$31$ correct value per unit = $\$4$ per unit.

$\$4 \times 1,000$ units = $\$4,000$.

If ending inventory is overstated, net income will be overstated.

If beginning inventory is overstated, net income will be understated.

Therefore, net income for 2007 was overstated by $\$4,000$ and net income for 2008 was understated by $\$4,000$.

EXERCISE 9-7 (15–20 minutes)

	No. of Lots	Sales Price Per Lot	Total Sales Price	Relative Sales Price	Total Cost	Cost Allocated to Lots	Cost Per Lot (Cost Allocated/ No. of Lots)
Group 1	9	\$3,000	\$ 27,000	\$27,000/\$127,800	X 89,460	\$18,900	\$2,100
Group 2	15	4,000	60,000	\$60,000/\$127,800	X 89,460	42,000	2,800
Group 3	17	2,400	<u>40,800</u>	\$40,800/\$127,800	X 89,460	<u>28,560</u>	1,680
			<u>\$127,800</u>			<u>\$89,460</u>	

Sales (see schedule) \$80,000

Cost of goods sold (see schedule) 56,000

Gross profit 24,000

Operating expenses 18,200

Net income \$ 5,800

	Number of Lots Sold*	Cost Per Lot	Cost of Lots Sold	Sales	Gross Profit
Group 1	4	\$2,100	\$ 8,400	\$12,000	\$ 3,600
Group 2	8	2,800	22,400	32,000	9,600
Group 3	15	1,680	<u>25,200</u>	<u>36,000</u>	<u>10,800</u>
Total	<u>27</u>		<u>\$56,000</u>	<u>\$80,000</u>	<u>\$24,000</u>

* 9 – 5 = 4

15 – 7 = 8

17 – 2 = 15

EXERCISE 9-8 (12–17 minutes)

Chairs	No. of Chairs	Sales Price per Lot	Total Sales Price	Relative Sales Price	Total Cost	Cost Allocated to Chairs	Cost per Chair
Lounge chairs	400	\$90	\$36,000	\$36,000/\$95,000	\$59,850	\$22,680	\$56.70
Armchairs	300	80	24,000	\$24,000/\$95,000	59,850	15,120	50.40
Straight chairs	700	50	<u>35,000</u>	\$35,000/\$95,000	59,850	<u>22,050</u>	31.50
			<u>\$95,000</u>			<u>\$59,850</u>	

Chairs	Number of Chairs Sold	Cost per Chair	Cost of Chairs Sold	Sales	Gross Profit
Lounge chairs	200	\$56.70	\$11,340	\$18,000	\$ 6,660
Armchairs	100	50.40	5,040	8,000	2,960
Straight chairs	120	31.50	<u>3,780</u>	<u>6,000</u>	<u>2,220</u>
			<u>\$20,160</u>	<u>\$32,000</u>	<u>\$11,840</u>

Inventory of straight chairs

$(700 - 120) \times \$31.50 = \$18,270$

EXERCISE 9-9 (5–10 minutes)

Unrealized Holding Gain or Loss—Income		
(Purchase Commitments).....		35,000
Estimated Liability on Purchase		
Commitments		35,000

EXERCISE 9-10 (15–20 minutes)

- (a) If the commitment is material in amount, there should be a footnote in the balance sheet stating the nature and extent of the commitment. The footnote may also disclose the market price of the materials. The excess of market price over contracted price is a gain contingency which per FASB Statement No. 5 cannot be recognized in the accounts until it is realized.
- (b) The drop in the market price of the commitment should be charged to operations in the current year if it is material in amount. The following entry would be made:

Unrealized Holding Gain or Loss—Income		
(Purchase Commitments)		10,800
Estimated Liability on Purchase		
Commitments		10,800

The entry is made because a loss in utility has occurred during the period in which the market decline took place. The account credited in the above entry should be included among the current liabilities on the balance sheet, with an appropriate footnote indicating the nature and extent of the commitment. This liability indicates the minimum obligation on the commitment contract at the present time—the amount that would have to be forfeited in case of breach of contract.

- (c) Assuming the \$10,800 market decline entry was made on December 31, 2008, as indicated in (b), the entry when the materials are received in January 2009 would be:

Raw Materials	97,200	
Estimated Liability on Purchase Commitments.....	10,800	
Accounts Payable.....		108,000

EXERCISE 9-10 (Continued)

This entry debits the raw materials at the actual cost, eliminates the \$10,800 liability set up at December 31, 2008, and records the contractual liability for the purchase. This permits operations to be charged this year with the \$97,200, the other \$10,800 of the cost having been charged to operations in 2008.

EXERCISE 9-11 (8–13 minutes)

1. $\frac{20\%}{100\% + 20\%} = 16.67\% \text{ OR } 16 \frac{2}{3}\%.$
2. $\frac{25\%}{100\% + 25\%} = 20\%.$
3. $\frac{33 \frac{1}{3}\%}{100\% + 33 \frac{1}{3}\%} = 25\%.$
4. $\frac{50\%}{100\% + 50\%} = 33.33\% \text{ OR } 33 \frac{1}{3}\%.$

EXERCISE 9-12 (10–15 minutes)

(a)	Inventory, May 1 (at cost)		\$160,000
	Purchases (at cost)		640,000
	Purchase discounts		(12,000)
	Freight-in		<u>30,000</u>
	Goods available (at cost)		818,000
	Sales (at selling price)	\$1,000,000	
	Sales returns (at selling price)	<u>(70,000)</u>	
	Net sales (at selling price)	930,000	
	Less: Gross profit (30% of \$930,000)	<u>279,000</u>	
	Sales (at cost)		<u>651,000</u>
	Approximate inventory, May 31 (at cost)		<u>\$167,000</u>

EXERCISE 9-12 (Continued)

(b) Gross profit as a percent of sales must be computed:

$$\frac{30\%}{100\% + 30\%} = 23.08\% \text{ of sales.}$$

Inventory, May 1 (at cost)		\$160,000
Purchases (at cost)		640,000
Purchase discounts		(12,000)
Freight-in		<u>30,000</u>
Goods available (at cost)		818,000
Sales (at selling price)	\$1,000,000	
Sales returns (at selling price)	<u>(70,000)</u>	
Net sales (at selling price)	930,000	
Less: Gross profit (23.08% of \$930,000)	<u>214,644</u>	
Sales (at cost)		<u>715,356</u>
Approximate inventory, May 31 (at cost)		<u>\$102,644</u>

EXERCISE 9-13 (15–20 minutes)

(a) Merchandise on hand, January 1	\$ 38,000
Purchases	72,000
Less: Purchase returns and allowances	(2,400)
Freight-in	<u>3,400</u>
Total merchandise available (at cost)	111,000
Cost of goods sold*	<u>75,000</u>
Ending inventory	36,000
Less: Undamaged goods	<u>10,900</u>
Estimated fire loss	<u>\$ 25,100</u>

$$\text{*Gross profit} = \frac{33 \frac{1}{3}\%}{100\% + 33 \frac{1}{3}\%} = 25\% \text{ of sales.}$$

Cost of goods sold = 75% of sales of \$100,000 = \$75,000.

EXERCISE 9-13 (Continued)

(b) Cost of goods sold = 66 2/3% of sales of \$100,000 = \$66,667	
Total merchandise available (at cost)	
[\$111,000 (as computed above) – \$66,667]	\$44,333
Less: Undamaged goods	<u>10,900</u>
Estimated fire loss	<u>\$33,433</u>

EXERCISE 9-14

Beginning inventory		\$170,000
Purchases		<u>390,000</u>
		560,000
Purchase returns		<u>(30,000)</u>
Goods available (at cost)		530,000
Sales	\$650,000	
Sales returns	<u>(24,000)</u>	
Net sales	626,000	
Less: Gross profit (40% X \$626,000)	<u>(250,400)</u>	<u>375,600</u>
Estimated ending inventory (unadjusted for damage)		154,400
Less: Goods on hand—undamaged (at cost)		
\$21,000 X (1 – 40%)		(12,600)
Less: Goods on hand—damaged (at net realizable value)		<u>(5,300)</u>
Fire loss on inventory		<u>\$136,500</u>

EXERCISE 9-15 (10–15 minutes)

Beginning inventory (at cost)		\$ 38,000
Purchases (at cost)		<u>85,000</u>
Goods available (at cost)		123,000
Sales (at selling price)	\$116,000	
Less sales returns	<u>4,000</u>	
Net sales	112,000	
Less: Gross profit* (2/7 of \$112,000)	<u>32,000</u>	
Net sales (at cost)		<u>80,000</u>
Estimated inventory (at cost)		43,000
Less: Goods on hand (\$30,500 – \$6,000)		<u>24,500</u>
Claim against insurance company		<u>\$ 18,500</u>

*Computation of gross profit: $\frac{40\%}{100\% + 40\%} = 2/7$ of selling price

Note: Depending on details of the consignment agreement and Duncan's insurance policy, the consigned goods might be covered by Duncan's insurance policy.

EXERCISE 9-16 (15–20 minutes)

	<u>Lumber</u>	<u>Millwork</u>	<u>Hardware</u>
Inventory 1/1/08 (cost)	\$ 250,000	\$ 90,000	\$ 45,000
Purchases to 8/18/08 (cost)	<u>1,500,000</u>	<u>375,000</u>	<u>160,000</u>
Cost of goods available	1,750,000	465,000	205,000
Deduct cost of goods sold*	<u>1,664,000</u>	<u>410,000</u>	<u>150,000</u>
Inventory 8/18/08	<u>\$ 86,000</u>	<u>\$ 55,000</u>	<u>\$ 55,000</u>

*(See computations on next page)

EXERCISE 9-16 (Continued)

Computation for cost of goods sold:*

$$\text{Lumber: } \frac{\$2,080,000}{1.25} = \$1,664,000$$

$$\text{Millwork: } \frac{\$533,000}{1.30} = \$410,000$$

$$\text{Hardware: } \frac{\$210,000}{1.40} = \$150,000$$

*Alternative computation for cost of goods sold:

Markup on selling price:

Cost of goods sold:

$$\text{Lumber: } \frac{25\%}{100\% + 25\%} = 20\% \text{ or } 1/5 \quad \$2,080,000 \times 80\% = \$1,664,000$$

$$\text{Millwork: } \frac{30\%}{100\% + 30\%} = 3/13 \quad \$533,000 \times 10/13 = \$410,000$$

$$\text{Hardware: } \frac{40\%}{100\% + 40\%} = 2/7 \quad \$210,000 \times 5/7 = \$150,000$$

EXERCISE 9-17 (20–25 minutes)

Ending inventory:

(a) Gross profit is 45% of sales

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: Gross profit (45% of sales)	<u>1,125,000</u>	
Sales (at cost)		<u>1,375,000</u>
Ending inventory (at cost)		<u>\$ 725,000</u>

(b) Gross profit is 60% of cost

$$\frac{60\%}{100\% + 60\%} = 37.5\% \text{ markup on selling price}$$

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: Gross profit (37.5% of sales)	<u>937,500</u>	
Sales (at cost)		<u>1,562,500</u>
Ending inventory (at cost)		<u>\$ 537,500</u>

(c) Gross profit is 35% of sales

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: Gross profit (35% of sales)	<u>875,000</u>	
Sales (at cost)		<u>1,625,000</u>
Ending inventory (at cost)		<u>\$ 475,000</u>

EXERCISE 9-17 (Continued)**(d) Gross profit is 25% of cost**

$$\frac{25\%}{100\% + 25\%} = 20\% \text{ markup on selling price}$$

Total goods available for sale (at cost)		\$2,100,000
Sales (at selling price)	\$2,500,000	
Less: Gross profit (20% of sales)	<u>500,000</u>	
Sales (at cost)		<u>2,000,000</u>
Ending inventory (at cost)		<u>\$ 100,000</u>

EXERCISE 9-18 (20–25 minutes)

(a)	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$ 58,000	\$100,000
Purchases	122,000	200,000
Net markups	<u> </u>	<u>10,345</u>
Totals	<u>\$180,000</u>	310,345
Net markdowns		<u>(26,135)</u>
Sales price of goods available		284,210
Deduct: Sales		<u>186,000</u>
Ending inventory at retail		<u>\$ 98,210</u>

- (b)**
1. $\$180,000 \div \$300,000 = \underline{60\%}$
 2. $\$180,000 \div \$273,865 = \underline{65.73\%}$
 3. $\$180,000 \div \$310,345 = \underline{58\%}$
 4. $\$180,000 \div \$284,210 = \underline{63.33\%}$

EXERCISE 9-18 (Continued)

- (c) 1. Method 3.
2. Method 3.
3. Method 3.

(d) $58\% \times \$98,210 = \underline{\$56,962}$

(e) $\$180,000 - \$56,962 = \underline{\$123,038}$

(f) $\$186,000 - \$123,038 = \underline{\$62,962}$

EXERCISE 9-19 (12–17 minutes)

	<u>Cost</u>		<u>Retail</u>
Beginning inventory	\$ 200,000		\$ 280,000
Purchases	<u>1,375,000</u>		<u>2,140,000</u>
Totals	1,575,000		2,420,000
Add: Net markups			
Markups		\$95,000	
Markup cancellations		<u>(15,000)</u>	<u>80,000</u>
Totals	<u>\$1,575,000</u>		2,500,000
Deduct: Net markdowns			
Markdowns		35,000	
Markdowns cancellations		<u>(5,000)</u>	<u>30,000</u>
Sales price of goods available			2,470,000
Deduct: Sales			<u>2,200,000</u>
Ending inventory at retail			<u>\$ 270,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$1,575,000}{\$2,500,000} = 63\%$$

$$\text{Ending inventory at cost} = 63\% \times \$270,000 = \underline{\$170,100}$$

EXERCISE 9-20 (20–25 minutes)

	<u>Cost</u>	<u>Retail</u>
Beginning inventory	\$30,000	\$ 46,500
Purchases	48,000	88,000
Purchase returns	(2,000)	(3,000)
Freight on purchases	<u>2,400</u>	
Totals	78,400	<u>131,500</u>
Add: Net markups		
Markups		\$10,000
Markup cancellations		<u>(1,500)</u>
Net markups		<u>8,500</u>
Totals	<u>\$78,400</u>	<u>140,000</u>
Deduct: Net markdowns		
Markdowns		9,300
Markdowns cancellations		<u>(2,800)</u>
Net markdowns		<u>6,500</u>
Sales price of goods available		133,500
Deduct: Net sales (\$99,000 – \$2,000)		<u>97,000</u>
Ending inventory, at retail		<u>\$ 36,500</u>

$$\text{Cost-to-retail ratio} = \frac{\$78,400}{\$140,000} = 56\%$$

$$\text{Ending inventory at cost} = 56\% \times \$36,500 = \underline{\$20,440}$$

EXERCISE 9-21 (10–15 minutes)

(a) Inventory turnover:

2004	2003
<u>\$6,584</u>	<u>\$6,109</u>
\$1,063 + \$1,082	\$1,082 + \$1,055
2	2
= 6.13 times	= 5.72 times

(b) Average days to sell inventory:

2004	2003
365 ÷ 6.13 = 59.5 days	365 ÷ 5.72 = 63.8 days

***EXERCISE 9-22 (25–35 minutes)**

(a) Conventional Retail Method

	<u>Cost</u>	<u>Retail</u>
Inventory, January 1, 2006	\$ 38,100	\$ 60,000
Purchases (net)	<u>130,900</u>	<u>178,000</u>
	169,000	238,000
Add: Net markups	<u> </u>	<u>22,000</u>
Totals	<u>\$169,000</u>	260,000
Deduct: Net markdowns		<u>13,000</u>
Sales price of goods available		247,000
Deduct: Sales (net)		<u>167,000</u>
Ending inventory at retail		<u>\$ 80,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$169,000}{\$260,000} = 65\%$$

$$\text{Ending inventory at cost} = 65\% \times \$80,000 = \underline{\underline{\$52,000}}$$

(b) LIFO Retail Method

	<u>Cost</u>	<u>Retail</u>
Inventory, January 1, 2006	\$ 38,100	\$ 60,000
Net Purchases	130,900	178,000
Net markups		22,000
Net markdowns		<u>(13,000)</u>
Total (excluding beginning inventory)	<u>130,900</u>	<u>187,000</u>
Total (including beginning inventory)	<u>\$169,000</u>	247,000
Deduct sales (net)		<u>167,000</u>
Ending inventory at retail		<u>\$ 80,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$130,900}{\$187,000} = 70\%$$

***EXERCISE 9-22 (Continued)**

Computation of ending inventory at LIFO cost, 2007:

Ending Inventory at Retail Prices	Layers at Retail Prices	Cost to Retail (Percentage)	Ending Inventory at LIFO Cost
\$80,000	2006 \$60,000 X	63.5%*	\$38,100
	2007 20,000 X	70.0%	<u>14,000</u>
			<u>\$52,100</u>
*\$38,100	(prior years cost to retail)		
<u>\$60,000</u>			

***EXERCISE 9-23 (15–20 minutes)**

(a)

	Cost	Retail
Inventory, January 1, 2007	\$14,000	\$ 20,000
Net Purchases	58,800	81,000
Freight-in	7,500	
Net markups		<u>9,000</u>
Totals	<u>\$80,300</u>	110,000
Sales		(80,000)
Net markdowns		(1,600)
Estimated theft		<u>(2,000)</u>
Ending inventory at retail		<u>\$ 26,400</u>

Cost-to-retail ratio: $\frac{\$80,300}{\$110,000} = 73\%$

Ending inventory at lower of average cost or market = \$26,400 X 73%
= \$19,272

***EXERCISE 9-23 (Continued)**

(b)	<u>Cost</u>	<u>Retail</u>
Purchases	\$58,800	\$81,000
Freight-in	7,500	
Net markups		9,000
Net markdowns		<u>(1,600)</u>
Totals	<u>\$66,300</u>	<u>\$88,400</u>

Cost-to-retail ratio: $\frac{\$66,300}{\$88,400} = 75\%$

The increment at retail is \$26,400 – \$20,000 = \$6,400.

The increment is costed at 75% X \$6,400 = \$4,800.

Ending inventory at LIFO retail:

	<u>Cost</u>	<u>Retail</u>
Beginning inventory, 2007	\$14,000	\$20,000
Increment	<u>4,800</u>	<u>6,400</u>
Ending inventory, 2007	<u>\$18,800</u>	<u>\$26,400</u>

***EXERCISE 9-24 (10–15 minutes)**

(a) Cost-to-retail ratio—beginning inventory: $\frac{\$216,000}{\$300,000} = 72\%$

*($\$294,300 \div 1.09$) X 72% = \$194,400

*Since the above computation reveals that the inventory quantity has declined below the beginning level, it is necessary to convert the ending inventory to beginning-of-the-year prices (by dividing by 1.09) and then multiply it by the beginning cost-to-retail ratio (72%).

***EXERCISE 9-24 (Continued)**

(b) Ending inventory at retail prices deflated $\\$365,150 \div 1.09$	\$335,000
Beginning inventory at beginning-of-year prices	<u>300,000</u>
Inventory increase in terms of beginning-of-year dollars	<u>\$ 35,000</u>
Beginning inventory (at cost)	\$216,000
Additional layer, $\\$35,000 \times 1.09 \times 76\%^*$	<u>28,994</u>
	<u>\$244,994</u>

***($\$364,800 \div \$480,000$)**

***EXERCISE 9-25 (5–10 minutes)**

Ending inventory at retail (deflated) $\\$100,100 \div 1.10$	\$91,000
Beginning inventory at retail	<u>74,500</u>
Increment at retail	<u>\$16,500</u>

Ending inventory on LIFO basis	Cost
	<hr/>
First layer	\$36,000
Second layer ($\\$16,500 \times 1.10 \times 60\%$)	<u>10,890</u>
	<u>\$46,890</u>

***EXERCISE 9-26 (20–25 minutes)**

(a)	Cost	Retail
Beginning inventory	\$ 30,100	\$ 50,000
Net purchases	108,500	150,000
Net markups		10,000
Totals	\$138,600	210,000
Net markdowns		(5,000)
Sales		(126,900)
Ending inventory at retail		\$ 78,100

Cost-retail ratio = 66% (\$138,600/\$210,000)

Ending inventory at cost (\$78,100 X 66%) \$ 51,546

(b)	Cost	Retail
Beginning inventory	\$ 30,100	\$ 50,000
Net purchases	108,500	150,000
Net markups		10,000
Net markdowns		(5,000)
Total (excluding beginning inventory)	108,500	155,000
Total (including beginning inventory)	\$138,600	205,000
Sales		(126,900)
Ending inventory at retail (current)		78,100
Ending inventory at retail (base year) (\$78,100 ÷ 1.10)		\$ 71,000

Cost-retail ratio for new layer:

\$108,500/\$155,000 = 70%

Layers:

Base layer

\$50,000 X 1.00 X 60.2%* =

\$ 30,100

New layer

(\$71,000 – \$50,000) X 1.10 X 70% =

16,170

\$ 46,270

*(\$30,100/\$50,000)

(c) Cost of goods available for sale	\$138,600
Ending inventory at cost, from (b)	46,270
Cost of goods sold	\$ 92,330

***EXERCISE 9-27 (20–25 minutes)**

2006	Restate to base-year retail ($\\$118,720 \div 1.06$)	<u><u>\$112,000</u></u>
	Layers: 1. $\$100,000 \times 1.00 \times 54\% =$	\$ 54,000
	2. $\$ 12,000 \times 1.06 \times 57\% =$	<u>7,250</u>
	Ending inventory	<u><u>\$ 61,250</u></u>
	*$\\$54,000 \div \\$100,000$	
2007	Restate to base-year retail ($\\$138,750 \div 1.11$)	<u><u>\$125,000</u></u>
	Layers: 1. $\$100,000 \times 1.00 \times 54\% =$	\$ 54,000
	2. $\$ 12,000 \times 1.06 \times 57\% =$	<u>7,250</u>
	3. $\$ 13,000 \times 1.11 \times 60\% =$	<u>8,658</u>
	Ending inventory	<u><u>\$ 69,908</u></u>
2008	Restate to base-year retail ($\\$125,350 \div 1.15$)	<u><u>\$109,000</u></u>
	Layers: 1. $\$100,000 \times 1.00 \times 54\% =$	\$ 54,000
	2. $\$ 9,000 \times 1.06 \times 57\% =$	<u>5,438</u>
	Ending inventory	<u><u>\$ 59,438</u></u>
2009	Restate to base-year retail ($\\$162,500 \div 1.25$)	<u><u>\$130,000</u></u>
	Layers: 1. $\$100,000 \times 1.00 \times 54\% =$	\$ 54,000
	2. $\$ 9,000 \times 1.06 \times 57\% =$	<u>5,438</u>
	3. $\$ 21,000 \times 1.25 \times 58\% =$	<u>15,225</u>
	Ending inventory	<u><u>\$ 74,663</u></u>

***EXERCISE 9-28 (5–10 minutes)**

Inventory (beginning)	7,600	
Adjustment to Record Inventory at Cost*		7,600
($\$212,600 - \$205,000$)		

***Note:** This account is an income statement account showing the effect of changing from a lower-of-cost-or-market approach to a straight cost basis.

TIME AND PURPOSE OF PROBLEMS

Problem 9-1 (Time 10–15 minutes)

Purpose—to provide the student with an understanding of the lower of cost or market approach to inventory valuation, similar to Problem 9-2. The major difference between these problems is that Problem 9-1 provides some ambiguity to the situation by changing the catalog prices near the end of the year.

Problem 9-2 (Time 25–30 minutes)

Purpose—to provide the student with an understanding of the lower of cost or market approach to inventory valuation. The student is required to examine a number of individual items and apply the lower of cost or market rule and to also explain the use and value of the lower of cost or market rule.

Problem 9-3 (Time 30–35 minutes)

Purpose—to provide a problem that requires entries for reducing inventory to lower of cost or market under the perpetual inventory system using both the direct and the indirect method.

Problem 9-4 (Time 20–30 minutes)

Purpose—to provide another problem where a fire loss must be computed using the gross profit method. Certain goods remained undamaged and therefore an adjustment is necessary. In addition, the inventory was subject to an obsolescence factor which must be considered.

Problem 9-5 (Time 40–45 minutes)

Purpose—to provide the student with a complex problem involving a fire loss where the gross profit method must be employed. The problem is complicated because a number of adjustments must be made to the purchases account related to merchandise returned, unrecorded purchases, and shipments in transit. In addition, some cash to accrual computations are necessary.

Problem 9-6 (Time 20–30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. The problem is relatively straightforward although transfers-in from other departments as well as the proper treatment for normal spoilage complicate the problem. A good problem that summarizes the essentials of the retail inventory method.

Problem 9-7 (Time 20–30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problem 9-6, except that a few different items must be evaluated in finding ending inventory at retail and cost. Unusual items in this problem are employee discounts granted and loss from breakage. A good problem that summarizes the essentials of the retail inventory method.

Problem 9-8 (Time 20–30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problems 9-6 and 9-7, except that the student is asked to list the factors that may have caused the difference between the computed inventory and the physical count.

Problem 9-9 (Time 30–40 minutes)

Purpose—to provide the student with a problem requiring financial statement and note disclosure of inventories, the income disclosure of an inventory market decline, and the treatment of purchase commitments.

Problem 9-10 (Time 30–40 minutes)

Purpose—to provide the student with an opportunity to write a memo explaining what is designated market value and how it is computed. As part of this memo, the student is required to compute inventory on the lower of cost or market basis using the individual item approach.

Time and Purpose of Problems (Continued)

***Problem 9-11** (Time 30–35 minutes)

Purpose—to provide the student with a retail inventory problem where both the conventional retail and dollar-value LIFO method must be computed. An excellent problem for highlighting the difference between these two approaches to inventory valuation. It should be noted that the cost to retail percentage is given for LIFO so less computation is necessary.

***Problem 9-12** (Time 30–40 minutes)

Purpose—to provide the student with a comprehensive problem covering the retail and LIFO retail inventory methods, the computation of an inventory shortage, and the treatment of four special items relative to the retail inventory method.

***Problem 9-13** (Time 30–40 minutes)

Purpose—to provide the student with a basic problem illustrating the change from conventional retail to LIFO retail. This problem emphasizes many of the same issues as Problem 9-11, except that a dollar-value LIFO computation is not needed. A good problem for providing the essential issues related to a change to LIFO retail.

***Problem 9-14** (Time 40–50 minutes)

Purpose—to provide the student with a retail inventory problem where both the conventional retail and dollar-value LIFO method must be computed. The problem is similar to Problem 9-10, except that the problem involves a three-year period which adds complexity to the problem. This problem provides an excellent summary of the essential elements related to the change of the retail inventory method from conventional retail to LIFO retail and dollar-value LIFO retail.

SOLUTIONS TO PROBLEMS

PROBLEM 9-1

Item	Cost	Replacement Cost	Ceiling*	Floor**	Designated Market	Lower of Cost or Market
A	\$470	\$ 460	\$ 455	\$355	\$ 455	\$455
B	450	440	480	372	440	440
C	830	610	810	630	630	630
D	960	1,000	1,070	830	1,000	960

***Ceiling = 2009 catalog selling price less sales commissions and estimated other cost of disposal. (2009 catalogue prices are in effect as of 12/01/08.)**

****Floor = Ceiling less (20% X 2009 catalog selling price).**

PROBLEM 9-2

- (a) 1. The balance in the Allowance to Reduce Inventory to Market at May 31, 2007, should be \$36,000, as calculated in Exhibit 1 below.

Exhibit 1

**Calculations of Proper Balance
on the Allowance to Reduce Inventory to Market
At May 31, 2007**

	Cost	Replace- ment Cost	NRV (Ceiling)	NRV less normal profit (Floor)	LCM
Aluminum siding	\$ 70,000	\$ 62,500	\$ 56,000	\$ 50,900	\$ 56,000
Cedar shake siding	86,000	79,400	84,800	77,400	79,400
Louvered glass doors	112,000	124,000	168,300	149,800	112,000
Thermal windows	<u>140,000</u>	<u>122,000</u>	<u>140,000</u>	<u>124,600</u>	<u>124,600</u>
Totals	<u>\$408,000</u>	<u>\$387,900</u>	<u>\$449,100</u>	<u>\$402,700</u>	<u>\$372,000</u>

Inventory cost	\$408,000
LCM valuation	<u>372,000</u>
Allowance at May 31, 2007	<u>\$ 36,000</u>

2. For the fiscal year ended May 31, 2007, the loss that would be recorded due to the change in the Allowance to Reduce Inventory to Market would be \$6,500, as calculated below.

Balance prior to adjustment	\$29,500
Required balance	<u>(36,000)</u>
Loss to be recorded	<u>\$(6,500)</u>

PROBLEM 9-2 (Continued)

- (b) The use of the lower of cost or market (LCM) rule is based on both the matching principle and the concept of conservatism. The matching principle applies because the application of the LCM rule allows for the recognition of a decline in the utility (value) of inventory as a loss in the period in which the decline takes place.**

The departure from the cost principle for inventory valuation is permitted on the basis of conservatism. The general rule is that the historical cost principle is abandoned when the future utility of an asset is no longer as great as its original cost.

PROBLEM 9-3

(a)	12/31/07 (Direct Method)		
	Cost of Goods Sold	58,000	
	Inventory		58,000

	12/31/08	
Cost of Goods Sold		70,000
Inventory		70,000

(b)	12/31/07 (Allowance Method)		
	To write down inventory to market:		
	Loss Due to Market Decline of Inventory	58,000	
	Allowance to Reduce Inventory to Market		58,000

	12/31/08	
To write down inventory to market:		
Loss Due to Market Decline of Inventory	12,000	
Allowance to Reduce Inventory to Market		12,000
 [(\$900,000 – \$830,000) – \$58,000]		

PROBLEM 9-4

Beginning inventory		\$ 80,000
Purchases		<u>280,000</u>
		360,000
Purchase returns		<u>(28,000)</u>
Total goods available		332,000
Sales	\$415,000	
Sales returns	<u>(21,000)</u>	
	394,000	
Less: Gross profit (34% of \$394,000)	<u>133,960</u>	<u>(260,040)</u>
Ending inventory (unadjusted for damage)		71,960
Less: Goods on hand—undamaged		
(\$30,000 X [1 – 34%])		<u>19,800</u>
Inventory damaged		52,160
Less: Salvage value of damaged inventory		<u>7,150</u>
Fire loss on inventory		<u>\$ 45,010</u>

PROBLEM 9-5

John Kimmel Corporation
COMPUTATION OF INVENTORY FIRE LOSS
April 15, 2008

Inventory, 1/1/08		\$ 75,000
Purchases, 1/1/ – 3/31/08		52,000
April merchandise shipments paid		3,400
Unrecorded purchases on account		<u>10,600</u>
Total		141,000
Less: Shipments in transit	\$ 2,300	
 Merchandise returned	<u>950</u>	<u>3,250</u>
Merchandise available for sale		137,750
Less estimated cost of sales:		
Sales, 1/1/ – 3/31/08	135,000	
Sales, 4/1/ – 4/15/08		
Receivables acknowledged		
at 4/15/08	\$36,000	
Estimated receivables not		
acknowledged	<u>8,000</u>	
Total	44,000	
Add collections, 4/1/ – 4/15/08		
(\$12,950 – \$950)	<u>12,000</u>	
Total	56,000	
Less receivables, 3/31/08	<u>40,000</u>	<u>16,000</u>
Total sales 1/1/ – 4/15/08	151,000	
Less gross profit (44%* X \$151,000)	<u>66,440</u>	<u>84,560</u>
Estimated merchandise inventory		53,190
Less: Sale of salvaged inventory		<u>3,500</u>
Inventory fire loss		<u>\$ 49,690</u>

PROBLEM 9-5 (Continued)

***Computation of Gross Profit Ratio**

Net sales, 2006		\$390,000
Net sales, 2007		<u>530,000</u>
 Total net sales		920,000
Beginning inventory	\$ 75,200	
Net purchases, 2006	235,000	
Net purchases, 2007	<u>280,000</u>	
 Total	590,200	
Less: Ending inventory	<u>75,000</u>	<u>515,200</u>
 Gross profit		<u>\$404,800</u>
Gross profit ratio (\$404,800 ÷ \$920,000)		<u>44%</u>

PROBLEM 9-6

(a)	Cost	Retail
Beginning Inventory	\$ 17,000	\$ 25,000
Purchases	86,500	137,000
Freight-in	7,000	
Purchase returns	(2,300)	(3,000)
Transfers-in from suburb branch	9,200	13,000
Totals	\$117,400	172,000
Net markups		8,000
		180,000
Net markdowns		(4,000)
Sales		\$(85,000)
Sales returns		(2,400)
Inventory losses due to breakage		(400)
Ending inventory at retail		\$ 93,000

$$\text{Cost-to-retail ratio} = \frac{\$117,400}{\$180,000} = 65.2\%$$

(b)	Ending inventory at lower of average cost or market (65.2% of \$93,000)	<u>\$ 60,636</u>
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PROBLEM 9-7

	Cost	Retail
Beginning Inventory	\$ 250,000	\$ 390,000
Purchases	914,500	1,460,000
Purchase returns	(60,000)	(80,000)
Purchase discounts	(18,000)	
Freight-in	79,000	
Markups		120,000
Markup cancellations	<u>(40,000)</u>	<u>80,000</u>
Totals	<u>\$1,165,500</u>	1,850,000
Markdowns		(45,000)
Markdown cancellations		<u>20,000</u> (25,000)
Sales		\$(1,460,000)
Sales returns		<u>97,500</u> (1,362,500)
Inventory losses due to breakage		(2,500)
Employee discounts		<u>(8,000)</u>
Ending inventory at retail		<u>\$ 452,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$1,165,500}{\$1,850,000} = 63\%$$

Ending inventory at cost (63% of \$452,000)	<u>\$ 284,760</u>
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PROBLEM 9-8

(a)	Cost	Retail
Inventory (beginning)	\$ 52,000	\$ 78,000
Purchases	262,000	423,000
Purchase returns	(5,600)	(8,000)
Freight-in	16,600	
Totals	\$325,000	493,000
Markups		9,000
Markup cancellations		(2,000)
		500,000
Net markdowns		(3,600)
Normal spoilage and breakage		(10,000)
Sales		(380,000)
Ending inventory at retail		\$106,400

$$\text{Cost-to-retail ratio} = \frac{\$325,000}{\$500,000} = 65\%$$

Ending inventory at lower of cost or market (65% of \$106,400)	<u>\$ 69,160</u>
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(b) The difference between the inventory estimate per retail method and the amount per physical count may be due to:

1. Theft losses (shoplifting or pilferage).
2. Spoilage or breakage above normal.
3. Differences in cost/retail ratio for purchases during the month, beginning inventory, and ending inventory.
4. Markups on goods available for sale inconsistent between cost of goods sold and ending inventory.
5. A wide variety of merchandise with varying cost/retail ratios.
6. Incorrect reporting of markdowns, additional markups, or cancellations.

PROBLEM 9-9

- (a) The inventory section of Brooks' Balance Sheet as of November 30, 2007, including required footnotes, is presented below. Also presented below are the inventory section supporting calculations.

Current assets

Inventory Section (Note 1.)

Finished goods (Note 2.)	\$641,000	
Work-in-process	108,700	
Raw materials	227,400	
Factory supplies	<u>64,800</u>	
Total inventories		<u>\$1,041,900</u>

Note 1. Lower of cost (first-in, first-out) or market is applied on a major category basis for finished goods, and on a total inventory basis for work-in-process, raw materials, and factory supplies.

Note 2. Seventy-five percent of bar end shifters finished goods inventory in the amount of \$136,500 ($\$182,000 \times .75$) is pledged as collateral for a bank loan, and one-half of the head tube shifters finished goods is held by catalog outlets on consignment.

PROBLEM 9-9 (Continued)**Supporting Calculations**

	<u>Finished Goods</u>	<u>Work-in- Process</u>	<u>Raw Materials</u>	<u>Factory Supplies</u>
Down tube shifters at market	\$264,000			
Bar end shifters at cost	182,000			
Head tube shifters at cost	195,000			
Work-in-process at market		\$108,700		
Derailleurs at market			\$100,000 ¹	
Remaining items at market			127,400	
Supplies at cost				\$64,800 ²
Totals	<u>\$641,000</u>	<u>\$108,700</u>	<u>\$227,400</u>	<u>\$64,800</u>

¹\$240,000 X 1/2 = \$120,000; \$120,000 ÷ 1.2 = \$100,000.

²\$69,000 – \$4,200 = \$64,800.

- (b) The decline in the market value of inventory below cost may be reported using one or two alternate methods, the direct write-down of inventory or the establishment of an allowance account. The decline in the market value of inventory may be reflected in Brooks' Income Statement as a separate loss item for the fiscal year ended November 30, 2007. The loss amount may also be written off directly, increasing the cost of goods sold on Brooks' Income Statement. The loss must be reported in continuing operations rather than in extraordinary items. The loss must be included in the Income Statement since it is material to Brooks' financial statements.
- (c) Purchase contracts for which a firm price has been established should be disclosed on the financial statements of the buyer. If the contract price is greater than the current market price and a loss is expected when the purchase takes place, an unrealized holding loss amounting to the difference between the contracted price and the current market price should be recognized on the Income Statement in the period during which the price decline takes place. Also, an estimated liability on purchase commitments should be recognized on the Statement of Financial Position. The recognition of the loss is unnecessary if a firm sales commitment exists which precludes the loss.

PROBLEM 9-10

(a)

Schedule A

Item	On Hand Quantity	Replacement Cost/Unit	NRV (Ceiling)	NRV— Normal Profit (Floor)	Designated Market	Cost	Lower of Cost or Market
A	1,100	\$8.40	\$9.00	\$7.20	\$8.40	\$7.50	\$7.50
B	800	8.00	8.50	7.30	8.00	8.20	8.00
C	1,000	5.40	6.10	5.50	5.50	5.60	5.50
D	1,000	4.20	5.50	4.00	4.20	3.80	3.80
E	1,400	6.30	6.10	5.10	6.10	6.40	6.10

Schedule B

Item	Cost	Lower of Cost or Market	Difference
A	1,100 X \$7.50 = \$8,250	1,100 X \$7.50 = \$8,250	None
B	800 X \$8.20 = \$6,560	800 X \$8.00 = \$6,400	\$160
C	1,000 X \$5.60 = \$5,600	1,000 X \$5.50 = \$5,500	\$100
D	1,000 X \$3.80 = \$3,800	1,000 X \$3.80 = \$3,800	None
E	1,400 X \$6.40 = \$8,960	1,400 X \$6.10 = \$8,540	<u>\$420</u>
			<u>\$680</u>

(b)	Cost of Goods Sold.....	680
	Inventory.....	680

or

	Loss Due to Market Decline of Inventory	680
	Allowance to Reduce Inventory to Market	680

PROBLEM 9-10 (Continued)

(c)

To: Finn Berg, Clerk

From: Manager of Accounting

Date: January 14, 2007

Subject: Instructions on determining lower of cost or market for inventory valuation

This memo responds to your questions regarding our use of lower of cost or market for inventory valuation. Simply put, value inventory at whichever is the lower: the actual cost or the market value of the inventory at the time of valuation.

The term cost is relatively simple. It refers to the amount our company paid for our inventory including costs associated with preparing the inventory for sale.

The term market, on the other hand, is more complicated. As you have already noticed, this value could be the inventory's replacement cost, its net realizable value (selling price minus any estimated costs to complete and sell), or its net realizable value less a normal profit margin. The profession requires that the middle value of the three above costs be chosen as the "designated market value." This designated market value is then compared to the actual cost in determining the lower of cost or market.

Refer to Item A on the attached schedule. The values for the replacement cost, net realizable value, and net realizable value less a normal profit margin are \$8.40, \$9.00 (\$10.50 – \$1.50), and \$7.20 (\$9.00 – \$1.80) respectively. The middle value is the replacement cost, \$8.40, which becomes the designated market value for Item A. Compare it with the actual cost, \$7.50, choosing the lower to value Item A in inventory. In this case, \$7.50 is the value chosen to value inventory. Thus, inventory for Item A amounts to \$8,250. (See Schedule B, Item A.)

PROBLEM 9-10 (Continued)

Proceed in the same way, always choosing the middle value among replacement cost, net realizable value, and net realizable value less a normal profit, and compare that middle value to the actual cost. The lower of these will always be the amount at which you value the particular item.

After you have aggregated the total lower of cost or market for all items, you will be likely to have a loss on inventory which must be accounted for. In our example, the loss is \$680. You can journalize this loss in one of two ways:

Cost of Goods Sold	680	
Inventory		680

or

Loss Due to Market Decline of Inventory	680	
Allowance to Reduce Inventory to Market		680

This memo should answer your questions about which value to choose when valuing inventory at lower of cost or market.

Schedule A

Item	On Hand Quantity	Replacement Cost/Unit	NRV Ceiling	NRV— Normal Profit (Floor)	Designated Market	Cost	Lower of Cost or Market
A	1,100	\$8.40	\$9.00	\$7.20	\$8.40	\$7.50	\$7.50
B	800	8.00	8.50	7.30	8.00	8.20	8.00
C	1,000	5.40	6.10	5.50	5.50	5.60	5.50
D	1,000	4.20	5.50	4.00	4.20	3.80	3.80
E	1,400	6.30	6.10	5.10	6.10	6.40	6.10

Schedule B

Item	Cost	Lower of Cost or Market	Difference
A	1,100 X \$7.50 = \$8,250	1,100 X \$7.50 = \$8,250	None
B	800 X \$8.20 = \$6,560	800 X \$8.00 = \$6,400	\$160
C	1,000 X \$5.60 = \$5,600	1,000 X \$5.50 = \$5,500	\$100
D	1,000 X \$3.80 = \$3,800	1,000 X \$3.80 = \$3,800	None
E	1,400 X \$6.40 = \$8,960	1,400 X \$6.10 = \$8,540	<u>\$420</u>
			<u>\$680</u>

***PROBLEM 9-11**

(a)	Cost	Retail
Inventory, January 1	\$ 30,000	\$ 43,000
Purchases	108,800	155,000
Purchase returns	<u>(2,800)</u>	<u>(4,000)</u>
Totals	136,000	194,000
Add: Net markups		
Markups	\$ 9,200	
Markup cancellations	<u>(3,200)</u>	<u>6,000</u>
Totals	<u>\$136,000</u>	200,000
Deduct: Net markdowns		
Markdowns	\$ 10,500	
Markdown cancellations	<u>(6,500)</u>	<u>4,000</u>
Sales price of goods available		196,000
Sales	\$159,000	
Sales returns and allowances	<u>(8,000)</u>	<u>151,000</u>
Ending inventory at retail		<u>\$ 45,000</u>

$$\text{Cost-to-retail ratio} = \frac{\$136,000}{\$200,000} = 68\%$$

Inventory at lower of cost or market (68% X \$45,000) \$ 30,600

(b)	Ending inventory at retail at January 1 price level (\$54,000 ÷ 1.08)	\$ 50,000
	Less beginning inventory at retail	<u>43,000</u>
	Inventory increment at retail, January 1 price level	<u>\$ 7,000</u>
	Inventory increment at retail, June 30 price level (\$7,000 X 1.08)	<u>\$ 7,560</u>
	Beginning inventory at cost	\$ 30,000
	Inventory increment at cost at June 30 price level (\$7,560 X 70%)	<u>5,292</u>
	Ending inventory at dollar-value LIFO cost	<u>\$ 35,292</u>

***PROBLEM 9-12**

(a) The retail method is appropriate in businesses that sell many different items at relatively low unit costs and that have a large volume of transactions such as Sears or Wal-Mart. The advantages of the retail method in these circumstances include the following:

- (1) Interim physical inventories can be estimated.
- (2) The retail method acts as a control as deviations from the physical count will have to be explained.

(b) Sprint Department Stores' ending inventory value, at cost, is \$75,300, calculated as follows:

	Cost	Retail
Beginning inventory	<u>\$ 68,000</u>	<u>\$100,000</u>
Purchases	\$248,200	\$400,000
Net markups		50,000
Net markdowns		<u>(110,000)</u>
Net purchases	<u>\$248,200</u>	<u>340,000</u>
Goods available		440,000
Sales		<u>(330,000)</u>
Estimated ending inventory at retail		<u>\$110,000</u>

Cost-to-retail percentage: $\$248,200 \div \$340,000 = \underline{73\%}$.

Beginning inventory layer	\$ 68,000	\$100,000
Incremental increase		
At retail (\$110,000 – \$100,000)		10,000
At cost (\$10,000 X 73%)	<u>7,300</u>	
Estimated ending inventory at LIFO cost	<u>\$ 75,300</u>	<u>\$110,000</u>

***PROBLEM 9-12 (Continued)**

- (c) The estimated shortage amount, at retail, for Sprint Department Stores is \$3,000 calculated as follows:

Estimated ending inventory at retail	\$110,000
Actual ending inventory at retail	<u>107,000</u>
Estimated inventory shortage	<u>\$ 3,000</u>

- (d) When using the retail inventory method, the four expenses and allowances noted are treated in the following manner:
- (1) Freight costs are added to the cost of purchases.
 - (2) Purchase returns and allowances are considered as reductions to both the cost price and the retail price.
 - (3) Sales returns and allowances are subtracted as an adjustment to sales.
 - (4) Employee discounts are deducted from the retail column in a manner similar to sales. They are not considered in the cost-to-retail percentage because they do not reflect an overall change in the selling price.

***PROBLEM 9-13**

(a)	<u>Cost</u>	<u>Retail</u>
Inventory (beginning)	\$ 13,600	\$ 24,000
Purchases	116,200	184,000
Markups	<u> </u>	<u>12,000</u>
Totals	<u>\$129,800</u>	220,000
Markdowns		(5,500)
Sales		<u>(170,000)</u>
Ending inventory at retail		<u>\$ 44,500</u>

$$\text{Cost-to-retail ratio} = \frac{\$129,800}{\$220,000} = 59\%$$

Ending inventory at cost (59% X \$44,500)	<u>\$ 26,255</u>
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(b) Ending inventory for 2007 under the LIFO method:

The cost-to-retail ratio for 2007 can be computed as follows:

$$\frac{\text{Net purchases at cost}}{\text{Net purchases plus markups less markdowns at retail}} = \frac{\$116,200}{\$184,000 + \$12,000 - \$5,500} = 61\%$$

December 31, 2007, inventory at LIFO cost:

	<u>Retail</u>	<u>Ratio</u>	<u>LIFO Cost</u>
Beginning inventory	\$24,000	57%	\$13,680
Increment in 2007	<u>20,500*</u>	61%	<u>12,505</u>
Ending inventory	<u>\$44,500</u>		<u>\$26,185</u>

*\$44,500 – \$24,000 = \$20,500

***PROBLEM 9-14**

**(a) Rudyard Kipling Department Store
COMPUTATION OF COST
OF DECEMBER 31, 2005, INVENTORY
BASED ON THE CONVENTIONAL RETAIL METHOD**

	<u>At Cost</u>	<u>At Retail</u>
Beginning inventory, January 1, 2005	\$ 26,700	\$ 56,000
Add (deduct) transactions affecting cost ratio:		
Gross purchases	311,000	554,000
Purchase returns	(5,200)	(10,000)
Purchase discounts	(6,000)	
Freight-in	17,600	
Net markups		<u>20,000</u>
Totals	<u>\$344,100</u>	<u>620,000</u>
Add (deduct) other retail transactions not considered in computation of cost ratio:		
Gross sales		(551,000)
Sales returns		9,000
Net markdowns		(12,000)
Employee discounts		<u>(3,000)</u>
Totals		<u>(557,000)</u>
Inventory, December 31, 2005:		
At retail		<u>\$ 63,000</u>
At cost (\$63,000 X 55.5%*)	<u>\$ 34,965</u>	

*Ratio of cost to retail = $\$344,100 \div \$620,000$
= 55.5%

***PROBLEM 9-14 (Continued)**

**(b) COMPUTATION OF COST
OF DECEMBER 31, 2005 INVENTORY
UNDER THE LIFO RETAIL METHOD**

	<u>Cost</u>	<u>Retail</u>
Totals used in computing cost ratio under conventional retail method (part a)	\$344,100	\$620,000
Exclude beginning inventory	<u>26,700</u>	<u>56,000</u>
Net purchases	317,400	564,000
Deduct net markdowns		<u>12,000</u>
Totals used on computing cost ratio under LIFO retail method	<u>\$317,400</u>	<u>\$552,000</u>
Cost ratio under LIFO retail method (\$317,400 ÷ \$552,000)	57.5%	
Inventory, December 31, 2005:		
At Retail (Conventional)		<u>\$63,000</u>
At Cost under LIFO retail method (\$63,000 X 57.5%)	<u>\$ 36,225</u>	

***PROBLEM 9-14 (Continued)**

**(c) COMPUTATION OF 2006 AND 2007
YEAR-END INVENTORIES
UNDER THE DOLLAR-VALUE LIFO METHOD**

Computation of retail values on the basis of January 1, 2006, price levels

	<u>Cost</u>	<u>Retail</u>
2006:		
Inventory at end of year (given)		<u>\$73,500</u>
Inventory at end of year stated in terms of January 1, 2006 prices (\$73,500 ÷ 105%)		70,000
January 1, 2006 inventory base (given) cost ratio of 55.5% (\$34,965 ÷ \$63,000)	\$34,965	<u>63,000</u>
Increment in inventory:		
In terms of January 1, 2006 prices		<u>\$ 7,000</u>
In terms of 2006 prices—\$7,000 X 105%		<u>\$ 7,350</u>
At LIFO cost—61% (2003 cost ratio) X \$7,350	<u>4,484</u>	
December 1, 2006 inventory at LIFO cost	<u>\$39,449</u>	
2007:		
Inventory at end of year (given)		<u>\$65,880</u>
Inventory at end of year stated in terms of January 1, 2007 prices (\$65,880 ÷ 108%)		<u>\$61,000</u>
December 31, 2007 inventory at LIFO cost—55.5%* (January 1, 2006 cost ratio) X \$61,000	<u>\$33,855</u>	

***PROBLEM 9-14 (Continued)**

(Note to instructor: Because the retail inventory stated in terms of January 1, 2006 prices at December 31, 2006, \$61,000, has fallen below the January 1, 2007 inventory base at retail, \$63,000, under the LIFO theory the 2007 layer has been depleted and only a portion of the original inventory base remains. Hence the LIFO cost at December 31, 2007 is determined by applying the January 1, 2006 cost ratio of 55.5 percent to the retail inventory value of \$61,000).

***Based on the beginning inventory for 2006 of $\frac{\$34,965 \text{ Cost}}{\$63,000 \text{ Retail}} = 55.5\%$.**

TIME AND PURPOSE OF CONCEPTS FOR ANALYSIS

CA 9-1 (Time 15–25 minutes)

Purpose—to provide the student with an opportunity to discuss the purpose, the application, and the potential disadvantages of the lower of cost or market method. In addition, the student is asked to discuss the ceiling and floor constraints for determining “market” value.

CA 9-2 (Time 20–30 minutes)

Purpose—to provide the student with an opportunity to examine ethical issues related to lower-of-cost-or-market on an individual-product basis. A relatively straightforward case.

CA 9-3 (Time 15–20 minutes)

Purpose—to provide the student with a case that requires an application and an explanation of the lower-of-cost-or-market rule and a differentiation of the LIFO and the average cost methods.

CA 9-4 (Time 25–30 minutes)

Purpose—to provide the student with an opportunity to discuss the main features of the retail inventory system. In this case, the following must be explained: (a) accounting features of the method, (b) conditions that may distort the results under the method, (c) advantages of using the retail method versus using a cost method, and (d) the accounting theory underlying net markdowns and net markups. A relatively straightforward case.

CA 9-5 (Time 15–25 minutes)

Purpose—the student discusses which costs are inventoriable, the theoretical arguments for the lower of cost or market rule, and the amount that should be used to value inventories when replacement cost is below the net realizable value less a normal profit margin. The treatment of beginning inventories and net markdowns when using the conventional retail inventory method must be explained.

CA 9-6 (Time 10–15 minutes)

Purpose—to provide the student with a case that allows examination of ethical issues related to the recording of purchase commitments.

***CA 9-7** (Time 10–15 minutes)

Purpose—to provide the student with a number of items that might be encountered when a conventional retail or LIFO retail problem develops. The student must determine whether items, such as markdowns, markdown cancellations, sales discounts, etc. should be considered in computing the cost-to-retail percentage.

SOLUTIONS TO CONCEPTS FOR ANALYSIS

CA 9-1

- (a) The purpose of using the lower of cost or market method is to reflect the decline of inventory value below its original cost. A departure from cost is justified on the basis that a loss of utility should be reported as a charge against the revenues in the period in which it occurs.
- (b) The term “market” in the phrase “the lower of cost or market” generally means the cost to replace the item by purchase or reproduction. Market is limited, however, to an amount that should not exceed the net realizable value (the “ceiling”) (that is, the estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal) and should not be less than net realizable value reduced by an allowance for an approximately normal profit margin (the “floor”). The “ceiling” covers obsolete, damaged, or shopworn material and prevents serious overstatement of inventory. The “floor,” on the other hand, deters serious understatement of inventory.
- (c) The lower of cost or market method may be applied either directly to each inventory item, to a category, or to the total inventory. The application of the rule to the inventory total, or to the total components of each category, ordinarily results in an amount that more closely approaches cost than it would if the rule were applied to each individual item. Under the first two methods, increases in market prices offset, to some extent, the decreases in market prices. The most common practice is, however, to price the inventory on an item-by-item basis. Companies favor the individual item approach because tax rules require that an individual item basis be used unless it involves practical difficulties. In addition, the individual item approach gives the most conservative valuation for balance sheet purposes.
- (d) Conceptually, the lower of cost or market method has some deficiencies. First, decreases in the value of the asset and the charge to expense are recognized in the period in which loss in utility occurs—not in the period of sale. On the other hand, increases in the value of the asset are recognized only at the point of sale. This situation is inconsistent and can lead to distortions in the presentation of income data.

Second, there is difficulty in defining “market” value. Basically, three different types of valuation can be used: replacement cost, net realizable value, and net realizable value less a normal markup. A reduction in the replacement cost of an item does not necessarily indicate a corresponding reduction in the utility (price) of the item. To recognize a loss in one period may misstate the period’s income and also that of future periods because when the merchandise is sold subsequently, the full price for the item is received.

Net realizable value reflects the future service potential of the asset and, for that reason, it is conceptually sound. But net realizable value cannot often be measured with any certainty. Therefore, we revert to replacement cost because net realizable value less a normal markup is even more uncertain than net realizable value.

From the standpoint of accounting theory there is little to justify the lower of cost or market rule. Although conservative from the balance sheet point of view, it permits the income statement to show a larger net income in future periods than would be justified if the inventory were carried forward at cost. The rule is applied only in those cases where strong evidence indicates that market declines in inventory prices have occurred that will result in losses when such inventories are disposed of.

CA 9-2

- (a) The accountant's ethical responsibility is to provide fair and complete financial information. In this case, the direct method distorts the cost of goods sold and hides the decline in market value.
- (b) If Brucki's direct method is used, management may have difficulty in calculations that involve the cost of goods sold. For example, these calculations are useful in establishing profit margins and determining selling prices; but from the investors' and stockholders' viewpoint, it is not good policy to hide declines in market value.
- (c) Maher should use the allowance method to disclose the decline in market value and avoid distorting cost of goods sold. However, she faces an ethical dilemma if Brucki will not accept the method Maher wants to use. She should consider various alternatives including the extremes of simply accepting her boss's decision to quitting if Brucki will not change his mind. Maher should assess the consequences of each possible alternative and weigh them carefully before she decides what to do.

CA 9-3

- (a)
 1. Horne's inventory should be reported at net realizable value. According to the lower of cost or market rule, market is defined as replacement cost. However, market cannot exceed net realizable value. In this instance, net realizable value is below original cost.
 2. The lower of cost or market rule is used to report the inventory in the balance sheet at its future utility value. It also recognizes a decline in the utility of inventory in the income statement in the period in which the decline occurs.
- (b) Generally, ending inventory would have been higher and cost of goods sold would have been lower had Horne used the LIFO inventory method in a period of declining prices. Inventory quantities increased and LIFO associates the oldest purchase prices with inventory. However, in this instance, there would have been no effect on ending inventory or cost of goods sold had Horne used the LIFO inventory method because Horne's inventory would have been reported at net realizable value according to the lower of cost or market rule. Net realizable value of the inventory is less than either its average cost or LIFO cost.

CA 9-4

- (a) The retail inventory method can be employed to estimate retail, wholesale, and manufacturing finished goods inventories.

The valuation of inventory under this method is arrived at by reducing the ending inventory at retail to an estimate of the lower of cost or market. The retail value of ending inventory can be computed by (1) taking a physical inventory, or by (2) subtracting net sales and net markdowns from the total retail value of merchandise available for sale (i.e., the sum of beginning inventory at retail, net purchases at retail, and net markups). The reduction of ending inventory at retail to an estimate of the lower of cost or market is accomplished by applying to it an estimated cost ratio arrived at by dividing the retail value of merchandise available for sale as computed in (2) above into the cost of merchandise available for sale (i.e., the sum of beginning inventory, net purchases, and other inventoriable costs).

CA 9-4 (Continued)

- (b) Since the retail method is based on an estimated cost ratio involving total merchandise available during the period, its validity depends on the underlying assumption that the merchandise in ending inventory is a representative mixture of all merchandise handled. If this condition does not exist, the cost ratio may not be appropriate for the merchandise in ending inventory and can result in significant error.

Where there are a number of inventory subdivisions for which differing rates of markup are maintained, there is no assurance that the ending inventory mix will be representative of the total merchandise handled during the period. In such cases accurate results can be obtained by sub-classifications by rate of markup.

Seasonal variations in the rate of markup will nullify the ending inventory "representative mix" assumption. Since the estimated cost ratio is based on total merchandise handled during the period, the same rate of markup should prevail throughout the period. Because of seasonal variations it may be necessary to use data for the last six months, quarter, or month to compute a cost ratio that is appropriate for ending inventory.

Material quantities of special sale merchandise handled during the period may also bias the result of this method because merchandise data included in arriving at the estimated cost ratio may not be proportionately represented in ending inventory. This condition may be avoided by accumulating special sale merchandise data in separate accounts.

Distortion of the ending inventory approximation under this method is often caused by an inadequate system of inventory control. Adequate accounting controls are necessary for the accurate accumulation of the data needed to arrive at a valid cost ratio. Physical controls are equally important because, for interim purposes, this method is usually applied without taking a physical inventory.

- (c) The advantages of using the retail method as compared to cost methods include the following:
1. Approximate inventory values can be determined without maintaining perpetual inventory records.
 2. The preparation of interim financial statements is facilitated.
 3. Losses due to fire or other casualty are readily determined.
 4. Clerical work in pricing the physical inventory is reduced.
 5. The cost of merchandise can be kept confidential in intracompany transfers.
- (d) The treatments to be accorded net markups and net markdowns must be considered in light of their effects on the estimated cost ratio. If both net markups and net markdowns are used in arriving at the cost ratio, ending inventory will be converted to an estimated average cost figure. Excluding net markdowns will result in the inventory being stated at an estimate of the lower of cost or market.

The lower cost ratio arrived at by excluding net markdowns permits the pricing of inventory at an amount that reflects its current utility. The assumption is that net markdowns represent a loss of utility that should be recognized in the period of markdown. Ending inventory is therefore valued on the basis of its revenue-producing potential and may be expected to produce a normal gross profit if sold at prevailing retail prices in the next period.

CA 9-5

- (a) 1. E.A. Poe's inventorable cost should include all costs incurred to get the lighting fixtures ready for sale to the customer. It includes not only the purchase price of the fixtures but also the other associated costs incurred on the fixtures up to the time they are ready for sale to the customer, for example, freight-in.
2. No, administrative costs are assumed to expire with the passage of time and not to attach to the product. Furthermore, administrative costs do not relate directly to inventories, but are incurred for the benefit of all functions of the business.
- (b) 1. The lower of cost or market rule is used for valuing inventories because of the concept of balance sheet conservatism and because the decline in the utility of the inventories below their cost should be recognized as a loss in the current period.
2. The net realizable value less a normal profit margin should be used to value the inventories because market should not be less than net realizable value less a normal profit margin. To carry the inventories at net realizable value less a normal profit margin provides a means of measuring residual usefulness of an inventory expenditure.
- (c) Poe's beginning inventories at cost and at retail would be included in the calculation of the cost ratio.

Net markdowns would be excluded from the calculation of the cost ratio. This procedure reduces the cost ratio because there is a larger denominator for the cost ratio calculation. Thus, the concept of balance sheet conservatism is being followed and a lower of cost or market valuation is approximated.

CA 9-6

- (a) Accounting standards require that when a contracted price is in excess of market, as it is in this case (market is \$5,000,000 and the contract price is \$6,000,000), and it is expected that losses will occur when the purchase is effected, losses should be recognized in the period during which such declines in market prices take place. It would be unethical to ignore recognition of the loss now if a loss is expected to occur when the purchase is effected.
- (b) If the loss is material, new and continuing shareholders are harmed by nonrecognition of the loss. Walker's position as an accounting professional also is affected if he accepts a financial report he knows violates GAAP.
- (c) If the preponderance of the evidence points to a loss when the purchase is effected, the controller should recognize the amount of the loss in the period in which the price decline occurs. In this case the loss is measured at \$1,000,000 and recorded as follows:

Unrealized Holding Gain or Loss—Income		
(Purchase Commitments).....	1,000,000	
Estimated Liability on Purchases Commitments.....		1,000,000

Walker should insist on statement preparation in accordance with GAAP. If Hands will not accept Walker's position, Walker will have to consider alternative courses of action such as contacting higher-ups at Vineland and assess the consequences of each course of action.

***CA 9-7**

(a) Conventional retail

3. Cost of items transferred in from other departments.
4. Retail value of items transferred in from other departments.
6. Purchase discounts.
8. Cost of beginning inventory.
9. Retail value of beginning inventory.
10. Cost of purchases.
11. Retail value of purchases.
12. Markups.
13. Markup cancellations.

(b) LIFO retail

1. Markdowns.
2. Markdown cancellations.
3. Cost of items transferred in from other departments.
4. Retail value of items transferred in from other departments.
6. Purchase discounts.
10. Cost of purchases.
11. Retail value of purchases.
12. Markups.
13. Markup cancellations.

(Note to instructor: If the goods broken or stolen are abnormal shrinkage, they are deducted from both the cost and retail columns.)

FINANCIAL REPORTING PROBLEM

- (a) Inventories are valued at cost, which is not in excess of current market prices. Product-related inventories are primarily maintained on the first-in, first-out method. Minor amounts of product inventories, including certain cosmetics and commodities are maintained on the last-in, first-out method. The cost of spare part inventories is maintained using the average cost method.
- (b) Inventories are reported on the balance sheet simply as “inventories” with sub-totals reported for (1) Materials and supplies, (2) Work in process, and (3) Finished goods.
- (c) In its note describing Cost of Products Sold, P&G indicates that cost of products sold primarily comprises direct materials and supplies consumed in the manufacture of product, as well as manufacturing labor and direct overhead expense necessary to acquire and convert the purchased materials and supplies into finished product. Cost of products sold also includes the cost to distribute products to customers, inbound freight costs, internal transfer costs, warehousing costs and other shipping and handling activity. Shipping and handling costs invoiced to customers are included in net sales.
- (d) Inventory turnover = $\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{\$25,076}{\frac{\$4,400 + \$3,640}{2}}$
 = 6.24 or approximately 58 days to turn its inventory, which is an improvement relative to 2003 (6.03 or 61 days).

Its gross profit percentages for 2004 and 2003 are as follows:

	2004	2003
Net sales	\$51,407	\$43,377
Cost of goods sold	<u>25,076</u>	<u>22,141</u>
Gross profit	<u>\$26,331</u>	<u>\$21,236</u>
 Gross profit percentage	 <u>51.22%</u>	 <u>48.96%</u>

P&G had a solid improvement in its Gross profit and Gross profit percentage. Sales in 2004 showed a 18.5% increased, probably due to an improving economy. It appears that P&G has been able to manage its costs to produce better gross margins on these increased sales.

FINANCIAL STATEMENT ANALYSIS CASE 1

- (a) Although no absolute rules can be stated, preferability for LIFO can ordinarily be established if (1) selling prices and revenues have been increasing, whereas costs have lagged, to such a degree that an unrealistic earnings picture is presented, and (2) LIFO has been traditional, such as department stores and industries where a fairly constant “base stock” is present such as refining, chemicals, and glass. Conversely, LIFO would probably not be appropriate: (1) where prices tend to lag behind costs; (2) in situations where specific identification is traditional, such as in the sale of automobiles, farm equipment, art, and antique jewelry; and (3) where unit costs tend to decrease as production increases, thereby nullifying the tax benefit that LIFO might provide. Note that where inventory turnover is high, the difference between inventory methods is usually negligible.

In this case, it is impossible to determine what conditions exist, but it seems probable that the characteristics of certain parts of the inventory make LIFO desirable, whereas other parts of the inventory provide higher benefits if FIFO is used.

- (b) It may provide this information (although it is not required to do so) because it believes that this information tells the reader that both its income and inventory would be higher if FIFO had been used.
- (c) The LIFO liquidation reduces operating costs because low price goods are matched against current revenue. As a result, operating costs are lower than normal because higher operating costs would have normally been deducted from revenues.
- (d) It would probably have reported more income if it had been on a FIFO basis. For example, its inventory as of December 31, 2007 was stated at \$1,635,040. Its inventory under FIFO would have been \$564,960 higher (2007) if FIFO had been used.

On the other hand, the LIFO liquidation would not have occurred in 2007 or previous years because FIFO would have been used. Thus, the 2007 reduction in operating costs of \$24,000 due to the LIFO liquidation would not have occurred.

FINANCIAL STATEMENT ANALYSIS CASE 2

(a) There are probably no finished goods because gold is a highly liquid commodity, and so it can be sold as soon as processing is complete. Ore in stockpiles is a noncurrent asset probably because processing takes more than one year.

(b) Sales are recorded as follows:

Accounts Receivable or Cash	XXX	
Sales Revenue		XXX

AND

Cost of Goods Sold	XXX	
Gold in Process Inventory		XXX

(c)	Balance Sheet		Income Statement
	Inventory	Overstated	Cost of goods sold
	Retained earnings	Overstated	Net income
	Accounts payable	No effect	
	Working capital	Overstated	
	Current ratio	Overstated	
			Understated
			Overstated

COMPARATIVE ANALYSIS CASE

- (a) Coca-Cola reported inventories of \$1,420 million, which represents 4.5% of total assets. PepsiCo reported inventories of \$1,541 million, which represents 5.5% of its total assets.
- (b) Coca-Cola determines the cost of its inventories on the basis of average cost or first-in, first-out (FIFO) methods; its inventories are valued at the lower of cost or market. PepsiCo reported that the cost of 16% of its 2004 inventories was computed using the LIFO method. PepsiCo's inventories are valued at the lower of cost (computed on the average, FIFO or LIFO method) or market.
- (c) Coca-Cola classifies and describes its inventories as primarily raw materials and supplies. PepsiCo classifies and describes its inventories as (1) raw materials, (2) work-in-process and (3) finished goods.
- (d) Inventory turnover ratios and days to sell inventory for 2004:

Coca-Cola	PepsiCo
$\frac{\$7,638}{\$1,420 + \$1,252} = 5.7 \text{ times}$	$\frac{\$13,406}{\$1,541 + \$1,412} = 9.1 \text{ times}$
$\frac{365}{2} \div 5.7 = 64 \text{ days}$	$\frac{365}{2} \div 9.1 = 40 \text{ days}$

A substantial difference between Coca-Cola and PepsiCo exists regarding the inventory turnover and related days to sell inventory. The primary reason is that PepsiCo's cost of goods sold and related inventories involves food operations as well as beverage cost. This situation is not true for Coca-Cola. Food will have a much higher turnover ratio because food must be turned over quickly or else spoilage will become a major problem.

RESEARCH CASES

CASE 1

Answers will depend on companies selected.

CASE 2

- (a) **CompUSA estimated a retail value of \$7.6 million, while one bidder predicted a selling price less than \$1 million.**
- (b) **The computers experienced an excessively high failure rate, leading to speculation that the units would sell for the value of the parts.**
- (c) **The sealed-bid auction had two major rules: (1) all of the units were to be sold together for cash, and (2) the buyer had to haul the units away.**
- (d) **Depends on students' opinions.**

FINANCIAL ACCOUNTING RESEARCH (FARs)

- (a) ARB 43, Chapter 4. Search Strings: “inventory pricing”, “lower of cost or market”, “state above cost”, “inventory cost method.”
- (b) ARB 43, Ch 4, Par 3. The term inventory embraces goods awaiting sale (the merchandise of a trading concern and the finished goods of manufacturer), goods in the course of production (work in process), and goods to be consumed directly or indirectly in production (raw materials and supplies). This definition of inventories excludes long-term assets subject to depreciation accounting, or goods which, when put into use, will be so classified. The fact that a depreciable asset is retired from regular use and held for sale does not indicate that the item should be classified as part of the inventory. Raw materials and supplies purchased for production may be used or consumed for the construction of long-term assets or other purposes not related to production, but the fact that inventory items representing a small portion of the total may not be absorbed ultimately in the production process does not require separate classification. By trade practice, operating materials and supplies of certain types of companies such as oil producers are usually treated as inventory.
- (c) ARB 43, Ch 4, State 6. As used in the phrase lower of cost or market, the term market means current replacement cost (by purchase or by reproduction, as the case may be) except that:
 - a. Market should not exceed the net realizable value (i.e., estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal); and
 - b. Market should not be less than net realizable value reduced by an allowance for an approximately normal profit margin.
- (d) ARB 43, Ch4, State 9. Only in exceptional cases may inventories properly be stated above cost. For example, precious metals having a fixed monetary value with no substantial cost of marketing may be stated at such monetary value; any other exceptions must be justifiable by inability to determine appropriate approximate costs, immediate marketability at quoted market price, and the characteristic of unit interchangeability. Where goods are stated above cost this fact should be fully disclosed.

ARB 43, Ch 4, Par 16. It is generally recognized that income accrues only at the time of sale, and that gains may not be anticipated by reflecting assets at their current sales prices. For certain articles, however, exceptions are permissible. Inventories of gold and silver, when there is an effective government-controlled market at a fixed monetary value, are ordinarily reflected at selling prices. A similar treatment is not uncommon for inventories representing agricultural, mineral, and other products, units of which are interchangeable and have an immediate marketability at quoted prices and for which appropriate costs may be difficult to obtain. Where such inventories are stated at sales prices, they should of course be reduced by expenditures to be incurred in disposal, and the use of such basis should be fully disclosed in the financial statements.

PROFESSIONAL SIMULATION

Resources

	B	C	D	E	F	G	H	I	J	K	L
1											
2											
3											
4											
5											
6											
7			Market								
8	Number of Units	Cost to Replace	Floor	Ceiling	Designated Market	Original Cost	LCM	Total Difference			
9	1,000	\$14.00	\$15.00	\$24.00	\$15.00	\$17.50	\$15.00	(\$2,500.00)			
10	1,000	78.00	44.00	74.00	74.00	48.00	48.00	0.00			
11	1,000	42.00	41.00	65.00	42.00	35.00	35.00	0.00			
12	1,000	45.00	46.00	74.50	46.00	47.50	46.00	(1,500.00)			
13							Total	(\$4,000.00)			
14								=====			
15	Note :										
16	Floor = (70% X expected selling price) – estimated cost to dispose.										
17	Ceiling = expected selling price – estimated cost to dispose.										
18											
19											

The following function is inserted in the cells in this column:
=MEDIAN(C7:E7)

The following function is inserted in the cells in this column:
=MIN(F7:G7)

The following formula is inserted in the cells in this column: =+(H7-G7)*B7

The following formula is inserted in this cell:
=SUM(I9:I12)

Journal Entry

Cost of Goods Sold	4,000	
Inventory		4,000

Note: This entry assumes use of direct method.

Explanation

Expected selling prices are important in the application of the lower of cost or market rule because they are used in measuring losses of utility in inventory that otherwise would not be recognized until the period during which the inventory is sold. Declines in replacement cost generally are assumed to foreshadow declines in selling prices expected in the next period and hence in the revenue expected upon the sale of the inventory during the next period. However, the use of current replacement cost as “market” is limited to those situations in which it falls between (1) net realizable value (the “ceiling”) and (2) net realizable value less a “normal” profit (the “floor”), both of which depend upon the selling prices expected in the next period for their computation.