

# CHAPTER 9

## Inventories: Additional Valuation Issues

### ASSIGNMENT CLASSIFICATION TABLE (BY TOPIC)

<b>Topics</b>	<b>Questions</b>	<b>Brief Exercises</b>	<b>Exercises</b>	<b>Problems</b>	<b>Concepts for Analysis</b>
1. Lower-of-cost-or-NRV.	1, 2, 3, 4, 5	1, 2, 3	1, 2, 3, 4, 5, 6	1, 2, 3, 10, 11	1, 2, 3, 5
2. Inventory accounting changes; relative sales value method; net realizable value.	6, 7, 8	4, 5, 6	7, 8, 9, 10	4	
3. Purchase commitments.	9	7, 8	11, 12	10	6
4. Gross profit method.	10, 11, 12, 13	9	13, 14, 15, 16, 17, 18, 19	5, 6	
5. Retail inventory method.	14, 15, 16	10	20, 21, 21	7, 8, 9	4, 5
6. Presentation and analysis.	17, 18	11	23	10	
7. Convergence.	19, 20, 21				

## ASSIGNMENT CLASSIFICATION TABLE (BY LEARNING OBJECTIVE)

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

## ASSIGNMENT CHARACTERISTICS TABLE

Item	Description	Level of Difficulty	Time (minutes)
E9-1	LCNRV.	Simple	15–20
E9-2	LCNRV.	Simple	10–15
E9-3	LCNRV.	Simple	15–20
E9-4	LCNRV—journal entries.	Simple	10–15
E9-5	LCNRV—valuation account.	Moderate	20–25
E9-6	LCNRV—error effect.	Simple	10–15
E9-7	Valuation at net realizable value.	Simple	10-15
E9-8	Valuation at net realizable value.	Simple	10-15
E9-9	Relative sales value method.	Simple	15–20
E9-10	Relative sales value method.	Simple	12–17
E9-11	Purchase commitments.	Simple	05–10
E9-12	Purchase commitments.	Simple	15–20
E9-13	Gross profit method.	Simple	8–13
E9-14	Gross profit method.	Simple	10–15
E9-15	Gross profit method.	Simple	15–20
E9-16	Gross profit method.	Moderate	15–20
E9-17	Gross profit method.	Simple	10–15
E9-18	Gross profit method.	Simple	15–20
E9-19	Gross profit method.	Moderate	20–25
E9-20	Retail inventory method.	Moderate	20–25
E9-21	Retail inventory method.	Simple	12–17
E9-22	Retail inventory method.	Simple	20–25
E9-23	Analysis of inventories.	Simple	10–15
P9-1	LCNRV.	Simple	10–15
P9-2	LCNRV.	Moderate	25–30
P9-3	LCNRV—Cost-of-goods-sold and Loss.	Moderate	30–35
P9-4	Valuation at net realizable value.	Simple	15-20
P9-5	Gross profit method.	Moderate	20–30
P9-6	Gross profit method.	Complex	40–45
P9-7	Retail inventory method.	Moderate	20–30
P9-8	Retail inventory method.	Moderate	20–30

## ASSIGNMENT CHARACTERISTICS TABLE (Continued)

<b>Item</b>	<b>Description</b>	<b>Level of Difficulty</b>	<b>Time (minutes)</b>
P9-9	Retail inventory method.	Moderate	20–30
P9-10	Statement and note disclosure, LCNRV, and purchase commitment.	Moderate	30–40
P9-11	LCNRV.	Moderate	30–40
CA9-1	LCNRV.	Moderate	15–25
CA9-2	LCNRV.	Moderate	20–30
CA9-3	LCNRV.	Moderate	15–20
CA9-4	Retail inventory method.	Moderate	25–30
CA9-5	Cost determination, LCNRV, retail method.	Moderate	15–25
CA9-6	Purchase commitments.	Moderate	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 net realizable value in the financial statements.
2. 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-net realizable value 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 net realizable value, 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-net realizable value method of valuing inventories include the following:

- (a) The method requires the reporting of estimated losses (all or a portion of the excess of actual cost over net realizable value) 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 net realizable value below original cost is no more a sustained loss than a rise above cost is a realized gain.
  - (b) 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.
  - (c) 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.
  - (d) 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 net realizable value in the next year.
  - (e) The lower-of-cost-or-net realizable value method values the inventory in the statement of financial position 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.
3. The lower-of-cost-or-net realizable value 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 in some countries 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.

**Questions Chapter 9 (Continued)**

4. (1) \$12.80.  
 (2) \$16.10.  
 (3) \$13.00.  
 (4) \$9.20.  
 (5) \$15.90.
5. One approach is to record the inventory at cost and then reduce it to net realizable value, thereby reflecting a loss in the current period (often referred to as the loss 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. Companies may record the adjustment either directly to the Inventory account or use the Allowance to Reduce Inventory to Market which is a contra account against inventory on the statement of financial position.
- Another approach is merely to substitute market for cost when pricing the new inventory (often referred to as the cost of goods sold 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.
6. An exception to the normal recognition rule occurs where the inventory consists of (1) agricultural assets, and (2) commodities held by broker-traders. Some minerals and minerals products may be valued at NRV.
7. (a) Biological assets are measured on initial recognition and at the end of each reporting period at fair value less costs to sell (NRV). Companies record a gain or loss due to changes in the NRV of biological assets in income when it arises.  
 (b) Agricultural produce (which are harvested from biological assets) are measured at fair value less costs to sell (NRV) at the point of harvest. Once harvested, the NRV of the agricultural produce becomes its cost and this asset is accounted for similar to other inventories held for sale in the normal course of business.

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  $[(£6.20 - £5.90) \times 150,000] = £45,000$ :

Unrealized Holding Gain or Loss—Income (Purchase Commitments).....	45,000	
Purchase Commitment Liability.....		45,000

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 statement of financial position 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.

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.

**Questions Chapter 9 (Continued)**

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:

25% on cost =	20% 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 \$1,000,000 (\$5 million X 20%) and net income equals \$250,000 [\$1,000,000 – (15% X \$5 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, 2011 .....		\$ 400,000
Purchases to February 10, 2011 .....	\$1,140,000	
Freight-in to February 10, 2011 .....	<u>60,000</u>	<u>1,200,000</u>
Merchandise available .....		1,600,000
Sales to February 10, 2011 .....	1,950,000	
Less gross profit at 40%.....	<u>780,000</u>	
Sales at cost .....		<u>1,170,000</u>
Inventory (approximately) at February 10, 2011 .....		<u>\$ 430,000</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 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 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-NRV 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.

**Questions Chapter 9 (Continued)**

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.

Computation of Inventory

	Cost	Retail	Ratio
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 $\$23 \times 66 \frac{2}{3}\% =$	<u>\$15.33</u>		

16. (a) Ending inventory:

	Cost	Retail
Beginning inventory .....	¥ 149,000	¥ 283,500
Purchases .....	1,400,000	2,160,000
Freight-in .....	<u>70,000</u>	<u>—</u>
Totals.....	1,619,000	2,443,500
Add net markups .....	<u>—</u>	<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>2,175,000</u>
Ending inventory, at retail .....		<u>¥ 312,500</u>

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

Ending inventory estimated at cost = 64% X ¥312,500 = ¥200,000.

(b) The retail method, above, showed an ending inventory at retail of ¥312,500; therefore, merchandise not accounted for amounts to ¥17,500 (¥312,500 – ¥295,000) at retail and ¥11,200 (¥17,500 X .64) at cost.

17. The accounting policies adopted in measuring inventories, including the cost formula used (weighted average, FIFO); the total carrying amount of inventories and the carrying amount in classifications (common classifications of inventories are merchandise, production supplies, raw materials, work in progress and finished goods); the carrying amount of inventories carried at fair value less costs to sell; the amount of inventories recognized as an expense during the period; the amount of any write-down of inventories recognized as an expense in the period and the amount of any reversal of any write-down that is recognized as a reduction in the amount of inventories recognized as expense in the period; the circumstances or events that led to the reversal of a write-down of inventories; and the carrying amount of inventories pledged as security for liabilities, if any.

## Questions Chapter 9 (Continued)

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. **Key Similarities are** (1) the guidelines on who owns the goods—goods in transit, consigned goods, special sales agreements, and the costs to include in inventory are essentially accounted for the same under IFRS and U.S. GAAP; (2) use of specific identification cost flow assumption, where appropriate; (3) unlike property plant and equipment, IFRS does not permit the option of valuing inventories at fair value. As indicated above, IFRS requires inventory to be written down, but inventory cannot be written up above its original cost; (4) certain agricultural products and minerals and mineral products can be reported at net realizable value using IFRS.

**Key differences are** related to (1) the LIFO cost flow assumption—U.S. GAAP permits the use of LIFO for inventory valuation. IFRS prohibits its use. FIFO and average-cost are the only two acceptable cost flow assumptions permitted under IFRS; (2) lower-of-cost-or-market test for inventory valuation—IFRS defines market as net realizable value. U.S. GAAP on the other hand defines market as replacement cost subject to the constraints of net realizable value (the ceiling) and net realizable value less a normal markup (the floor). That is, IFRS does not use a ceiling or a floor to determine market; (3) inventory write-downs—under U.S. GAAP, if inventory is written down under the lower-of-cost-or-market valuation, the new basis is now considered its cost. As a result, the inventory may not be written back up to its original cost in a subsequent period. Under IFRS, the write-down may be reversed in a subsequent period up to the amount of the previous write-down. Both the write-down and any subsequent reversal should be reported on the income statement; (4) The requirements for accounting and reporting for inventories are more principles-based under IFRS. That is, U.S. GAAP provides more detailed guidelines in inventory accounting.

20. As shown in the analysis below, under IFRS, LaTour's inventory turnover ratio is computed as follows:

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}} = \frac{€578}{€154} = 3.75 \text{ or approximately 97 days } (365 \div 3.75).$$

Difficulties in comparison to a company using U.S. GAAP could arise if the U.S. company uses the LIFO cost flow assumption, which is prohibited under IFRS. Generally in times of rising prices, LIFO results in lower inventory balance reported on the balance sheet (assume more recently purchased items are sold first). Thus, the U.S. GAAP company will report higher inventory turnover ratios. The LIFO reserve can be used to adjust the reported LIFO numbers to FIFO and to permit an “apples to apples” comparison.

**Questions Chapter 9 (Continued)**

21. Reed must not be aware the important convergence issue arising from the use of the LIFO cost flow assumption; IFRS specifically prohibits its use. Conversely, the LIFO cost flow assumption is widely used in the United States because of its favorable tax advantages. In addition, many argue that LIFO from a financial reporting point of view provides a better matching of current costs against revenue and therefore a more realistic income is computed.

The problem is compounded in the United States because LIFO cannot be used for tax purposes unless it is used for financial reporting purposes. As a result, unless the tax law is changed, it is unlikely that U.S. GAAP will eliminate the use of the LIFO cost flow assumption because of its substantial tax advantages for many companies.

Also, U.S. GAAP has more detailed rules related to accounting and reporting of inventories than IFRS. We expect that these more detailed rules will be used internationally because they provide practical guidance for some inventory accounting and reporting issues.

# SOLUTIONS TO BRIEF EXERCISES

## BRIEF EXERCISE 9-1

Item	Cost	NRV	LCNRV
Skis	\$190.00	\$161.00	\$161.00
Boots	106.00	108.00	106.00
Parkas	53.00	50.00	50.00

## BRIEF EXERCISE 9-2

(a)	Item	Cost	NRV	LCNRV
	<b>Item-by-item</b>			
	Jokers	€ 2,000	€ 2,100	€ 2,000
	Penguins	5,000	4,950	4,950
	Riddlers	4,400	4,625	4,400
	Scarecrows	<u>3,200</u>	<u>3,830</u>	<u>3,200</u>
	<b>Total</b>	<b><u>€14,600</u></b>	<b><u>€15,505</u></b>	<b><u>€14,550</u></b>

- (b) 1. Penguins only: €50  
 2. None on a whole group: €15,505 > €14,600.

## BRIEF EXERCISE 9-3

(a) Cost-of-goods-sold-method

Cost of Goods Sold .....	21,000,000
Allowance to Reduce Inventory to NRV .....	21,000,000

(b) Loss method

Loss Due to Decline of Inventory to NRV .....	21,000,000
Allowance to Reduce Inventory to NRV .....	21,000,000

### BRIEF EXERCISE 9-4

Biological Assets – Shearing Sheep.....	4,125*	
Unrealized Holding Gain or Loss – Income .....		4,125

\*€4,700 – €575 = €4,125.

### BRIEF EXERCISE 9-5

Wool Inventory .....	9,000	
Unrealized Holding Gain or Loss – Income .....		9,000
Cash .....	10,500	
Cost of Goods Sold.....	9,000	
Wool Inventory .....		9,000
Sales .....		10,500

### BRIEF EXERCISE 9-6

Group	Number of CDs	Sales Price per CD	Total Sales Price	Relative Sales Price	Total Cost	Cost Allocated to CDs	Cost per CD
1	100	¥ 5	¥ 500	5/100*	¥8,000 =	¥ 400	¥ 4**
2	800	¥10	8,000	80/100	X ¥8,000 =	6,400	¥ 8
3	100	¥15	<u>1,500</u>	15/100	X ¥8,000 =	<u>1,200</u>	¥12
			<u>¥10,000</u>			<u>¥8,000</u>	

\*¥500/¥10,000 = 5/100

\*\*¥400/100 = ¥4

### BRIEF EXERCISE 9-7

Unrealized Holding Loss—Income .....	50,000	
Purchase Commitment Liability.....		50,000

### BRIEF EXERCISE 9-8

Purchases (Inventory) .....	950,000	
Purchase Commitment Liability .....	50,000	
Cash .....		1,000,000

### BRIEF EXERCISE 9-9

Beginning inventory .....		€150,000
Purchases .....		<u>500,000</u>
Cost of goods available .....		650,000
Sales .....	€700,000	
Less gross profit (35% X €700,000) .....	<u>245,000</u>	
Estimated cost of goods sold .....		<u>455,000</u>
Estimated ending inventory destroyed in fire ...		<u>€195,000</u>

### BRIEF EXERCISE 9-10

	<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
<b>Deduct:</b>		
Net markdowns .....		7,000
Sales .....		<u>147,000</u>
Ending inventory at retail .....		<u>\$ 46,000</u>

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

Ending inventory at LCNRV (66% X \$46,000) = \$30,360

## BRIEF EXERCISE 9-11

Inventory turnover:

$$\frac{\text{€68,709.4}}{\frac{\text{€6,891} + \text{€6,867}}{2}} = 10.0 \text{ times}$$

Average days to sell inventory:

$$365 \div 10.0 = 36.5 \text{ days}$$

# SOLUTIONS TO EXERCISES

## EXERCISE 9-1 (15–20 minutes)

Part No.	Quantity	Per Unit		Total Cost	Total NRV	Lower-of-Cost-or-NRV
		Cost	NRV			
110	600	\$ 95	\$100.00	\$ 57,000	\$ 60,000	\$ 57,000
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	1.00	25,600	1,600	1,600
122	300	240	235.00	72,000	70,500	70,500
<b>Totals</b>				<u>\$370,600</u>	<u>\$341,300</u>	<u>\$335,100</u>

(a) \$335,100.

(b) \$341,300.

## EXERCISE 9-2 (10–15 minutes)

Item	Net Realizable Value	Cost	LCNRV
D	€80*	€75	€75
E	62	80	62
F	60	80	60
G	35	80	35
H	70	50	50
I	40	36	36

\*Estimated selling price – Estimated selling costs and cost to complete = €120 – €30 – €10 = €80.

**EXERCISE 9-3 (15–20 minutes)**

Item No.	Cost per Unit	Net Realizable Value	LCNRV	Quantity	Final Inventory Value
1320	\$3.20	\$2.90*	\$2.90	1,200	\$ 3,480
1333	2.70	2.40	2.40	900	2,160
1426	4.50	3.60	3.60	800	2,880
1437	3.60	1.85	1.85	1,000	1,850
1510	2.25	1.85	1.85	700	1,295
1522	3.00	3.10	3.00	500	1,500
1573	1.80	1.30	1.30	3,000	3,900
1626	4.70	4.50	4.50	1,000	4,500
					<u>\$21,565</u>

\*\$4.50 – \$1.60 = \$2.90.

**EXERCISE 9-4 (10–15 minutes)**

(a)	12/31/10	Cost of Goods Sold .....	24,000	
		Allowance to Reduce		
		Inventory to NRV .....		24,000
	12/31/11	Allowance to Reduce		
		Inventory to NRV .....	4,000	
		Cost of Goods Sold.....		4,000
(b)	12/31/10	Loss Due to Decline of		
		Inventory to NRV .....	24,000	
		Allowance to Reduce		
		Inventory to NRV .....		24,000
	12/31/11	Allowance to Reduce		
		Inventory to NRV .....	4,000*	
		Recovery of Inventory Loss .....		4,000

## EXERCISE 9-4 (Continued)

*Cost of inventory at 12/31/10 .....	£346,000
LCNRV at 12/31/10 .....	<u>(322,000)</u>
Allowance amount needed to reduce inventory to NRV (a) .....	<u>£ 24,000</u>
Cost of inventory at 12/31/11 .....	£410,000
LCNRV at 12/31/11 .....	<u>(390,000)</u>
Allowance amount needed to reduce inventory to NRV (b) .....	<u>£ 20,000</u>
Recovery of previously recognized loss	= (a) – (b)
	= £24,000 – £20,000
	= £4,000.

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

## EXERCISE 9-5 (20–25 minutes)

(a)	<u>February</u>	<u>March</u>	<u>April</u>
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>17,000</u>	<u>24,000</u>	<u>26,500</u>
Cost of goods available	32,000	39,100	43,500
Inventory, ending	<u>15,100</u>	<u>17,000</u>	<u>14,000</u>
Cost of goods sold	<u>16,900</u>	<u>22,100</u>	<u>29,500</u>
Gross profit	12,100	12,900	10,500
Gain (loss) due to market fluctuations of inventory*	<u>(2,000)</u>	<u>1,100</u>	<u>700</u>
	<u>\$10,100</u>	<u>\$14,000</u>	<u>\$11,200</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	\$14,000
Inventory at LCNRV	<u>(14,500)</u>	<u>(12,600)</u>	<u>(15,600)</u>	<u>(13,300)</u>
Allowance amount needed to reduce inventory to NRV	<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 Decline of Inventory to NRV.....	500	
		Allowance to Reduce Inventory to NRV .....		500
	Feb. 28	Loss Due to Decline of Inventory to NRV.....	2,000	
		Allowance to Reduce Inventory to NRV .....		2,000
	Mar. 31	Allowance to Reduce Inventory to NRV.....	1,100	
		Recovery of Inventory Loss .....		1,100
	Apr. 30	Allowance to Reduce Inventory to NRV.....	700	
		Recovery of Inventory Loss .....		700

### EXERCISE 9-6 (10–15 minutes)

Net realizable value	€50 – €14 = €36
Net realizable value less normal profit	€36 – € 9 = €27
Cost	€40
Lower-of-cost-or-NRV	€36

€38 figure used – €36 correct value per unit = €2 per unit.

€2 X 1,000 units = €2,000.

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

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

Therefore, net income for 2010 was overstated by €2,000 and net income for 2011 was understated by €2,000.

### EXERCISE 9-7 (10–15 minutes)

(a)	Unrealized Holding Gain or Loss – Income .....	212,000	
	Biological Assets – Milking Cows .....		212,000
(b)	Milk Inventory .....	72,000	
	Unrealized Holding Gain or Loss – Income.....		72,000
(c)	Cash .....	74,000	
	Cost of Goods Sold .....	72,000	
	Milk Inventory .....		72,000
	Sales .....		74,000

**EXERCISE 9-8 (10–15 minutes)**

<b>(a)</b>	<b>Biological Assets – Shearing Alpaca .....</b>	<b>6,725</b>	
	<b>Unrealized Holding Gain or Loss – Income .....</b>		<b>6,725</b>
<b>(b)</b>	<b>Wool Inventory .....</b>	<b>13,000</b>	
	<b>Unrealized Holding Gain or Loss – Income .....</b>		<b>13,000</b>
<b>(c)</b>	<b>Cash.....</b>	<b>14,500</b>	
	<b>Cost of Goods Sold .....</b>	<b>13,000</b>	
	<b>Wool Inventory.....</b>		<b>13,000</b>
	<b>Sales.....</b>		<b>14,500</b>
<b>(d)</b>	<b>(1) The birth of a baby Alpaca may result in a gain on the initial recognition of the biological asset.</b>		
	<b>(2) Losses may result as the fair value of the older Alpaca will likely decrease because the shearing is more limited than with the other Alpacas.</b>		

**EXERCISE 9-9 (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/\$125,000 X	\$85,000	\$18,360	\$2,040
Group 2	15	4,000	60,000	\$60,000/\$125,000 X	85,000	40,800	2,720
Group 3	19	2,000	<u>38,000</u>	\$38,000/\$125,000 X	85,000	<u>25,840</u>	1,360
			<u>\$125,000</u>			<u>\$85,000</u>	
Sales (see schedule)				\$78,000			
Cost of goods sold (see schedule)				<u>53,040</u>			
Gross profit				24,960			
Operating expenses				<u>18,200</u>			
Net income				<u>\$ 6,760</u>			

  

	Number of Lots Sold*	Cost Per Lot	Cost of Lots Sold	Sales	Gross Profit
Group 1	4	\$2,040	\$ 8,160	\$12,000	\$ 3,840
Group 2	8	2,720	21,760	32,000	10,240
Group 3	<u>17</u>	1,360	<u>23,120</u>	<u>34,000</u>	<u>10,880</u>
Total	<u>29</u>		<u>\$53,040</u>	<u>\$78,000</u>	<u>\$24,960</u>

\* 9 – 5 = 4

15 – 7 = 8

19 – 2 = 17

**EXERCISE 9-10 (12–17 minutes)**

Chairs	No. of Chairs	Sales Price per Chair	Total Sales Price	Relative Sales Price	Total Cost	Cost Allocated to Chairs	Cost per Chair
Lounge chairs	400	£90	£36,000	£36,000/£100,000 X	£60,000	£21,600	£54
Armchairs	300	80	24,000	£24,000/£100,000 X	60,000	14,400	48
Straight chairs	800	50	<u>40,000</u>	£40,000/£100,000 X	60,000	<u>24,000</u>	30
			<u>£100,000</u>			<u>£60,000</u>	

  

Chairs	Number of Chairs Sold	Cost per Chair	Cost of Chairs Sold	Sales	Gross Profit
Lounge chairs	200	£54	£10,800	£18,000	£ 7,200
Armchairs	100	48	4,800	8,000	3,200
Straight chairs	120	30	<u>3,600</u>	<u>6,000</u>	<u>2,400</u>
			<u>£19,200</u>	<u>£32,000</u>	<u>£12,800</u>

**Inventory of straight chairs**  
**(800 – 120) X £30 = £20,400**

**EXERCISE 9-11 (5–10 minutes)**

Unrealized Holding Gain or Loss—Income .....	25,000	
Purchase Commitment Liability .....		25,000

**EXERCISE 9-12 (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 that should not 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 .....	12,000	
Purchase Commitment Liability .....		12,000

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 statement of financial position, 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 \$12,000 market decline entry was made on December 31, 2011, as indicated in (b), the entry when the materials are received in January 2012 would be:

Raw Materials .....	108,000	
Purchase Commitment Liability .....	12,000	
Accounts Payable .....		120,000

## EXERCISE 9-12 (Continued)

This entry debits the raw materials at the current cost, eliminates the \$12,000 liability set up at December 31, 2011, and records the contractual liability for the purchase. This permits operations to be charged this year with the \$108,000, the other \$12,000 of the cost having been charged to operations in 2011.

## EXERCISE 9-13 (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 9-14 (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 (25% of €930,000) .....	<u>232,500</u>
Sales (at cost) .....	<u>697,500</u>
Approximate inventory, May 31 (at cost) .....	<u>€120,500</u>

## EXERCISE 9-14 (Continued)

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

$$\frac{25\%}{100\% + 25\%} = 20\% \text{ of sales.}$$

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 (20% of €930,000) .....	<u>186,000</u>	
Sales (at cost).....		<u>744,000</u>
Approximate inventory, May 31 (at cost) .....		<u>€ 74,000</u>

## EXERCISE 9-15 (15–20 minutes)

(a) Merchandise on hand, January 1.....	\$ 38,000
Purchases.....	92,000
Less: Purchase returns and allowances.....	(2,400)
Freight-in.....	<u>3,400</u>
Total merchandise available (at cost).....	131,000
Cost of goods sold*.....	<u>(90,000)</u>
Ending inventory .....	41,000
Less: Undamaged goods .....	<u>10,900</u>
Estimated fire loss.....	<u>\$ 30,100</u>

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

$$\text{Cost of goods sold} = 75\% \text{ of sales of } \$120,000 = \$90,000.$$

**EXERCISE 9-15 (Continued)**

<b>(b) Cost of goods sold = 66 2/3% of sales of \$120,000 = \$80,000</b>	
Total merchandise available (at cost).....	<b>\$51,000</b>
[\$131,000 [as computed in (a)] – \$80,000]	
Less: Undamaged goods.....	<u><b>10,900</b></u>
Estimated fire loss .....	<u><b>\$40,100</b></u>

**EXERCISE 9-16 (15–20 minutes)**

Beginning inventory .....		<b>\$170,000</b>
Purchases .....		<u><b>450,000</b></u>
		<b>620,000</b>
Purchase returns .....		<u><b>(30,000)</b></u>
Goods available (at cost) .....		<b>590,000</b>
Sales .....	<b>\$650,000</b>	
Sales returns .....	<u><b>(24,000)</b></u>	
Net sales .....	<b>626,000</b>	
Less: Gross profit (30% X \$626,000).....	<u><b>(187,800)</b></u>	<u><b>438,200</b></u>
Estimated ending inventory (unadjusted for damage).....		<b>151,800</b>
Less: Goods on hand—undamaged (at cost) \$21,000 X (1 – 30%).....		<b>14,700</b>
Less: Goods on hand—damaged (at net realizable value).....		<u><b>5,300</b></u>
Fire loss on inventory .....		<u><b>\$131,800</b></u>

**EXERCISE 9-17 (10–15 minutes)**

Beginning inventory (at cost) .....		¥ 38,000
Purchases (at cost).....		<u>90,000</u>
Goods available (at cost).....		128,000
Sales (at selling price).....	¥116,000	
Less sales returns .....	<u>4,000</u>	
Net sales.....	112,000	
Less: Gross profit* (20% of ¥112,000).....	<u>22,400</u>	
Net sales (at cost).....		<u>89,600</u>
Estimated inventory (at cost).....		38,400
Less: Goods on hand (¥30,500 – ¥6,000) .....		<u>24,500</u>
Claim against insurance company.....		<u>¥ 13,900</u>

\*Computation of gross profit:  $\frac{25\%}{100\% + 25\%} = 20\%$  of selling price

**EXERCISE 9-18 (15–20 minutes)**

	<u>Lumber</u>	<u>Millwork</u>	<u>Hardware</u>
Inventory 1/1/11 (cost)	\$ 250,000	\$ 90,000	\$ 45,000
Purchases to 8/18/11 (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>1,640,000</u>	<u>410,000</u>	<u>175,000</u>
Inventory 8/18/11	<u>\$ 110,000</u>	<u>\$ 55,000</u>	<u>\$ 30,000</u>

\*(See computations on next page)

## EXERCISE 9-18 (Continued)

### Computation for cost of goods sold:\*

$$\text{Lumber: } \frac{\$2,050,000}{1.25} = \$1,640,000$$

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

$$\text{Hardware: } \frac{\$245,000}{1.40} = \$175,000$$

### \*Alternative computation for cost of goods sold:

#### Markup on selling price:

#### Cost of goods sold:

$$\text{Lumber: } \frac{25\%}{100\% + 25\%} = 20\% \text{ or } 1/5 \quad \$2,050,000 \times 80\% = \$1,640,000$$

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

$$\text{Hardware: } \frac{40\%}{100\% + 40\%} = 2/7 \quad \$245,000 \times 5/7 = \$175,000$$

## EXERCISE 9-19 (20–25 minutes)

Ending inventory:

(a) Gross profit is 40% of sales

Total goods available for sale (at cost).....		£2,100,000
Sales (at selling price) .....	£2,300,000	
Less: Gross profit (40% of sales) .....	<u>920,000</u>	
Sales (at cost).....		<u>1,380,000</u>
Ending inventory (at cost).....		<u>£ 720,000</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) .....	£2,300,000	
Less: Gross profit (37.5% of sales).....	<u>862,500</u>	
Sales (at cost).....		<u>1,437,500</u>
Ending inventory (at cost).....		<u>£ 662,500</u>

(c) Gross profit is 35% of sales

Total goods available for sale (at cost).....		£2,100,000
Sales (at selling price) .....	£2,300,000	
Less: Gross profit (35% of sales) .....	<u>805,000</u>	
Sales (at cost).....		<u>1,495,000</u>
Ending inventory (at cost).....		<u>£ 605,000</u>

**EXERCISE 9-19 (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) .....	£2,300,000	
Less: Gross profit (20% of sales).....	<u>460,000</u>	
Sales (at cost) .....		<u>1,840,000</u>
Ending inventory (at cost) .....		<u>£ 260,000</u>

**EXERCISE 9-20 (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>20,000</u>
Totals.....	<u>\$180,000</u>	320,000
Net markdowns.....		<u>(30,000)</u>
Sales price of goods available .....		290,000
Deduct: Sales .....		<u>186,000</u>
Ending inventory at retail.....		<u>\$104,000</u>

- (b)
1.  $\$180,000 \div \$300,000 = \underline{60\%}$
  2.  $\$180,000 \div \$270,000 = \underline{66.67\%}$
  3.  $\$180,000 \div \$320,000 = \underline{56.25\%}$
  4.  $\$180,000 \div \$290,000 = \underline{62.07\%}$

## EXERCISE 9-20 (Continued)

- (c) 1. Method 3.  
 2. Method 3.  
 3. Method 3.
- (d)  $56.25\% \times \$104,000 = \underline{\$58,500}$
- (e)  $\$180,000 - \$58,500 = \underline{\$121,500}$
- (f)  $\$186,000 - \$121,500 = \underline{\$64,500}$

## EXERCISE 9-21 (12–17 minutes)

	<u>Cost</u>	<u>Retail</u>
Beginning inventory.....	€ 200,000	€ 280,000
Purchases.....	<u>1,425,000</u>	<u>2,140,000</u>
Totals.....	1,625,000	2,420,000
Add: Net markups		
Markups.....	€95,000	
Markup cancellations.....	<u>(15,000)</u>	<u>80,000</u>
Totals.....	<u>€1,625,000</u>	2,500,000
Deduct: Net markdowns		
Markdowns.....	35,000	
Markdown cancellations.....	<u>(5,000)</u>	<u>30,000</u>
Sales price of goods available.....		2,470,000
Deduct: Sales.....		<u>2,250,000</u>
Ending inventory at retail.....		<u>€ 220,000</u>

$$\text{Cost-to-retail ratio} = \frac{\text{€1,625,000}}{\text{€2,500,000}} = 65\%$$

$$\text{Ending inventory at cost} = 65\% \times \text{€220,000} = \underline{\text{€143,000}}$$

**EXERCISE 9-22 (20–25 minutes)**

	<u>Cost</u>	<u>Retail</u>
Beginning inventory .....	\$30,000	\$ 46,500
Purchases .....	55,000	88,000
Purchase returns .....	(2,000)	(3,000)
Freight on purchases .....	<u>2,400</u>	
Totals .....	85,400	131,500
<b>Add: Net markups</b>		
Markups .....	\$10,000	
Markup cancellations .....	<u>(1,500)</u>	
Net markups .....		<u>8,500</u>
Totals .....	<u>\$85,400</u>	140,000
<b>Deduct: Net markdowns</b>		
Markdowns.....	9,300	
Markdown cancellations.....	<u>(2,800)</u>	
Net markdowns .....		<u>6,500</u>
Sales price of goods available .....		133,500
Deduct: Net sales (\$95,000 – \$2,000).....		<u>93,000</u>
Ending inventory, at retail .....		<u>\$ 40,500</u>

$$\text{Cost-to-retail ratio} = \frac{\$85,400}{\$140,000} = 61\%$$

$$\text{Ending inventory at cost} = 61\% \times \$40,500 = \underline{\$24,705}$$

**EXERCISE 9-23 (10–15 minutes)**

(a) Inventory turnover:

2008	2007
$\frac{\text{€7,122}}{\text{€1,119} + \text{€2,086}} = 4.44 \text{ times}$	$\frac{\text{€5,936}}{\text{€1,017} + \text{€1,119}} = 5.56 \text{ times}$
2	2

(b) Average days to sell inventory:

2008	2007
$365 \div 4.44 = 82.2 \text{ days}$	$365 \div 5.56 = 65.6 \text{ days}$

# 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-net realizable value 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-net realizable value approach to inventory valuation. The student is required to examine a number of individual items and apply the lower-of-cost-or-net realizable value rule and to also explain the use and value of the lower-of-cost-or-net realizable value rule.

**Problem 9-3** (Time 30–35 minutes)

Purpose—to provide a problem that requires entries for reducing inventory to lower-of-cost-or-net realizable value under the perpetual inventory system using both the cost of goods sold and the loss method.

**Problem 9-4** (Time 15-20 minutes)

Purpose—to provide a problem that requires entries for recording the unrealized gains and losses on biological assets and harvested assets.

**Problem 9-5** (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 9-6** (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 9-7** (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 9-8** (Time 20–30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problem 9-7, 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 9-9** (Time 20–30 minutes)

Purpose—to provide the student with a problem on the retail inventory method. This problem is similar to Problems 9-7 and 9-8, except that the student is asked to list the factors that may have caused the difference between the computed inventory and the physical count.

## Time and Purpose of Problems (Continued)

### **Problem 9-10** (Time 30–40 minutes)

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

### **Problem 9-11** (Time 30–40 minutes)

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

# SOLUTIONS TO PROBLEMS

## PROBLEM 9-1

<u>Item</u>	<u>Cost</u>	<u>Net Realizable Value*</u>	<u>Lower-of- Cost-or- NRV</u>
A	\$470	\$ 450	\$450
B	450	430	430
C	830	640	640
D	960	1,000	960

**\*Net Realizable Value = 2011 catalog selling price less estimated costs to complete and sell. (2011 catalog prices are in effect as of 12/01/10.)**

**PROBLEM 9-2**

- (a) 1. The balance in the Allowance to Reduce Inventory to NRV at May 31, 2010, should be \$15,200, as calculated in Exhibit 1 below.

	<u>Cost</u>	<u>NRV</u>	<u>LCNRV</u>
Aluminum siding	\$ 70,000	\$ 56,000	\$ 56,000
Cedar shake siding	86,000	84,800	84,800
Louvered glass doors	112,000	168,300	112,000
Thermal windows	<u>140,000</u>	<u>140,000</u>	<u>140,000</u>
<b>Totals</b>	<b><u>\$408,000</u></b>	<b><u>\$449,100</u></b>	<b><u>\$392,800</u></b>

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Inventory cost	\$408,000
LCNRV valuation	<u>392,800</u>
Allowance at May 31, 2010	<u>\$ 15,200</u>

2. For the fiscal year ended May 31, 2010, the gain that would be recorded due to the change in the Allowance to Reduce Inventory to Net Realizable Value would be \$12,300, as calculated below.

Balance prior to adjustment.....	\$27,500
Required balance .....	<u>(15,200)</u>
Gain to be recorded .....	<u><b>\$(12,300)</b></u>

## **PROBLEM 9-2 (Continued)**

- (b) The use of the lower-of-cost-or-net realizable value (LCNRV) rule is based on both the expense recognition principle and the concept of conservatism. The expense recognition principle applies because the application of the LCNRV 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.**

<b>PROBLEM 9-3</b>
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<b>(a)</b>	<b>12/31/10 (Cost of Goods Sold Method)</b>		
	<b>Cost of Goods Sold.....</b>	<b>68,000</b>	
	<b>    Allowance to Reduce Inventory to NRV .....</b>		<b>68,000</b>
	<b>12/31/11</b>		
	<b>Cost of Goods Sold.....</b>	<b>7,000</b>	
	<b>    Allowance to Reduce Inventory to NRV</b>		
	<b>        [(\$905,000 – \$830,000) – \$68,000] .....</b>		<b>7,000</b>
<b>(b)</b>	<b>12/31/10 (Loss Method)</b>		
	<b>To write down inventory to net realizable value:</b>		
	<b>Loss Due to Decline of Inventory to NRV .....</b>	<b>68,000</b>	
	<b>    Allowance to Reduce Inventory to NRV .....</b>		<b>68,000</b>
	<b>12/31/11</b>		
	<b>To write down inventory to net realizable value:</b>		
	<b>Loss Due to Decline of Inventory to NRV .....</b>	<b>7,000</b>	
	<b>    Allowance to Reduce Inventory to NRV</b>		
	<b>        [(\$905,000 – \$830,000) – \$68,000] .....</b>		<b>7,000</b>

<b>PROBLEM 9-4</b>
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(a)	<b>Biological Assets—Grape Vineyard.....</b>	<b>15,000</b>	
	<b>Unrealized Holding Gain or Loss – Income.....</b>		<b>15,000</b>
(b)	<b>Grape Inventory .....</b>	<b>30,000</b>	
	<b>Unrealized Holding Gain or Loss – Income.....</b>		<b>30,000</b>
(c)	<b>Cash.....</b>	<b>35,000</b>	
	<b>Cost of Goods Sold .....</b>	<b>30,000</b>	
	<b>Grape Inventory .....</b>		<b>30,000</b>
	<b>Sales .....</b>		<b>35,000</b>
(d)	<b>Unrealized Holding Gain or Loss – Income .....</b>		<b>€15,000</b>
	<b>Unrealized Holding Gain or Loss – Income .....</b>		<b>30,000</b>
	<b>Gross Profit on Sold Grapes .....</b>		<b>5,000</b>
	<b>Total Effect on Income.....</b>		<b><u>€50,000</u></b>
(e)	<p><b>The increase in demand for the type of grapes Finn produces should increase the sales prices received for the grapes, increase the value of the harvested grapes since the value is based on the current commodity price, and increase the potential that the full harvest will be sold. The new producing vineyards coming on line next year will have negative effects on both the value of any increase in the grape vineyard (biological asset) and the value of the harvested grapes. The new vineyards may also increase supply and decrease prices as a result.</b></p>		

**PROBLEM 9-5**

<b>Beginning inventory</b> .....		<b>¥ 80,000</b>
<b>Purchases</b> .....		<u><b>290,000</b></u>
		<b>370,000</b>
<b>Purchase returns</b> .....		<u><b>(28,000)</b></u>
<b>Total goods available</b> .....		<b>342,000</b>
<b>Sales</b> .....	<b>¥415,000</b>	
<b>Sales returns</b> .....	<u><b>(21,000)</b></u>	
	<b>394,000</b>	
<b>Less: Gross profit (35% of ¥394,000)</b> .....	<u><b>137,900</b></u>	<u><b>(256,100)</b></u>
<b>Ending inventory (unadjusted for damage)</b> .....		<b>85,900</b>
<b>Less: Goods on hand—undamaged</b>		
<b>(¥30,000 X [1 – 35%])</b> .....		<u><b>19,500</b></u>
<b>Inventory damaged</b> .....		<b>66,400</b>
<b>Less: Salvage value of damaged inventory</b> .....		<u><b>8,150</b></u>
<b>Fire loss on inventory</b> .....		<u><u><b>¥ 58,250</b></u></u>

**PROBLEM 9-6**

**STANISLAW CORPORATION**  
**Computation of Inventory Fire Loss**  
**April 15, 2011**

Inventory, 1/1/11 .....		€ 75,000	
Purchases, 1/1/ – 3/31/11 .....		52,000	
April merchandise shipments paid .....		3,400	
Unrecorded purchases on account .....		<u>15,600</u>	
<b>Total</b> .....		<b>146,000</b>	
Less: Shipments in transit.....	€ 2,300		
Merchandise returned.....	<u>950</u>	<u>3,250</u>	
Merchandise available for sale .....			<b>142,750</b>
Less estimated cost of sales:			
Sales, 1/1/ – 3/31/11 .....	135,000		
Sales, 4/1/ – 4/15/11			
Receivables acknowledged			
at 4/15/11 .....	€46,000		
Estimated receivables not			
acknowledged.....	<u>8,000</u>		
<b>Total</b> .....	<b>54,000</b>		
Add collections, 4/1/ – 4/15/11			
(€12,950 – €950).....	<u>12,000</u>		
<b>Total</b> .....	<b>66,000</b>		
Less receivables, 3/31/11 .....	<u>40,000</u>	<u>26,000</u>	
<b>Total sales 1/1/ – 4/15/11</b> .....		<b>161,000</b>	
Less gross profit (45%* X €161,000) .....		<u>72,450</u>	<u>88,550</u>
Estimated merchandise inventory .....			54,200
Less: Sale of salvaged inventory .....			<u>3,500</u>
Inventory fire loss .....			<u>€ 50,700</u>

**PROBLEM 9-6 (Continued)**

**\*Computation of Gross Profit Ratio**

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<b>Net sales, 2009 .....</b>		<b>€390,000</b>
<b>Net sales, 2010 .....</b>		<b><u>530,000</u></b>
<b>    Total net sales .....</b>		<b>920,000</b>
<b>Beginning inventory .....</b>	<b>€ 66,000</b>	
<b>Net purchases, 2009 .....</b>	<b>235,000</b>	
<b>Net purchases, 2010 .....</b>	<b><u>280,000</u></b>	
<b>    Total .....</b>	<b>581,000</b>	
<b>Less: Ending inventory .....</b>	<b><u>75,000</u></b>	<b><u>506,000</u></b>
<b>    Gross profit .....</b>		<b><u>€414,000</u></b>
<b>Gross profit ratio (€414,000 ÷ €920,000).....</b>		<b><u>45%</u></b>

**PROBLEM 9-7**

(a)	Cost	Retail
Beginning Inventory .....	HK\$ 17,000	HK\$ 25,000
Purchases .....	82,500	137,000
Freight-in .....	7,000	
Purchase returns .....	(2,300)	(3,000)
Transfers in from suburban branch .....	9,200	13,000
<b>Totals .....</b>	<b>HK\$113,400</b>	<b>172,000</b>
Net markups .....		8,000
		180,000
Net markdowns .....		(4,000)
Sales .....	HK\$(95,000)	
Sales returns .....	2,400	(92,600)
Inventory losses due to breakage .....		(400)
Ending inventory at retail .....		<b>HK\$ 83,000</b>

$$\text{Cost-to-retail ratio} = \frac{\text{HK\$113,400}}{\text{HK\$180,000}} = 63\%$$

(b)	Ending inventory at LCNRV (63% of HK\$83,000) .....	<b><u>HK\$ 52,290</u></b>
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**PROBLEM 9-8**

	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 .....	42,000	—
Markups .....	\$ 120,000	—
Markup cancellations .....	(40,000)	80,000
<b>Totals</b> .....	<b><u>\$1,128,500</u></b>	<b>1,850,000</b>
Markdowns .....	(45,000)	—
Markdown cancellations .....	20,000	(25,000)
Sales .....	(1,410,000)	—
Sales returns.....	97,500	(1,312,500)
Inventory losses due to breakage.....		(4,500)
Employee discounts .....		(8,000)
Ending inventory at retail .....		<b><u>\$ 500,000</u></b>

Cost-to-retail ratio =  $\frac{\$1,128,500}{\$1,850,000} = 61\%$

Ending inventory at cost	
(61% of \$500,000) .....	<b><u>\$ 305,000</u></b>

**PROBLEM 9-9**

(a)	Cost	Retail
Inventory (beginning).....	£ 52,000	£ 78,000
Purchases .....	272,000	423,000
Purchase returns .....	(5,600)	(8,000)
Freight-in .....	16,600	—
Totals .....	<u>£335,000</u>	<u>493,000</u>
Markups .....		9,000
Markup cancellations .....		<u>(2,000)</u>
		500,000
Net markdowns .....		(3,600)
Normal spoilage and breakage .....		(10,000)
Sales .....		<u>(390,000)</u>
Ending inventory at retail .....		<u>£ 96,400</u>

$$\text{Cost-to-retail ratio} = \frac{\text{£335,000}}{\text{£500,000}} = 67\%$$

Ending inventory at LCNRV  
(67% of £96,400) ..... £ 64,588

- (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 9-10**

- (a) The inventory section of Maddox’s statement of financial position as of November 30, 2010, including required footnotes, is presented below. Also presented below are the inventory section supporting calculations.

**Current assets**

**Inventory Section (*Note 1.*)**

Finished goods ( <i>Note 2.</i> ) .....	\$643,000
Work-in-process .....	108,700
Raw materials .....	237,400
Factory supplies .....	<u>64,800</u>
Total inventories.....	<u>\$1,053,900</u>

***Note 1.*** Lower-of-cost (first-in, first-out) or-net realizable value 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 9-10 (Continued)**

**Supporting Calculations**

	Finished Goods	Work-in- Process	Raw Materials	Factory Supplies
Down tube shifters at NRV .....	\$266,000			
Bar end shifters at cost .....	182,000			
Head tube shifters at cost.....	195,000			
Work-in-process at NRV .....		\$108,700		
Derailleurs at NRV .....			\$110,000 <sup>1</sup>	
Remaining items at NRV .....			127,400	
Supplies at cost.....				\$64,800 <sup>2</sup>
Totals .....	\$643,000	\$108,700	\$237,400	\$64,800

<sup>1</sup>\$264,000 X 1/2 = \$132,000; \$132,000 ÷ 1.2 = \$110,000.

<sup>2</sup>\$69,000 – \$4,200 = \$64,800.

- (b) The decline in the net realizable value of inventory below cost may be reported using one or two alternate methods, the cost of goods sold method or the loss method. The decline in the net realizable value of inventory may be reflected in Maddox's income statement as a separate loss item for the fiscal year ended November 30, 2010. The loss amount may also be written off directly, increasing the cost of goods sold on Maddox's income statement. The loss must be reported in continuing operations. The loss must be included in the income statement since it is material to Maddox's 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 9-11**

(a)

Schedule A

Item	On Hand Quantity	Cost	NRV	Lower-of-Cost- or-NRV
A	1,100	¥7.50	¥9.00	¥7.50
B	800	8.20	8.10	8.10
C	1,000	5.60	5.45	5.45
D	1,000	3.80	4.50	3.80
E	1,400	6.40	6.00	6.00

Schedule B

Item	Cost	Lower-of-Cost-or-NRV	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 ¥8.10 = ¥6,480	¥ 80
C	1,000 X ¥5.60 = ¥5,600	1,000 X ¥5.45 = ¥5,450	¥150
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 ¥6.00 = ¥8,400	¥560
			<u>¥790</u>

(b) Cost of Goods Sold.....	790	
Allowance to Reduce Inventory to NRV.....		790
or		
Loss Due to Decline of Inventory to NRV.....	790	
Allowance to Reduce Inventory to NRV.....		790

## **PROBLEM 9-11 (Continued)**

**(c)**

**To: Jay Shin, Clerk**

**From: Accounting Manager**

**Date: January 14, 2011**

**Subject: Instructions on determining lower-of-cost-or-net realizable value for inventory valuation**

**This memo responds to your questions regarding our use of lower-of-cost-or-net realizable value for inventory valuation. Simply put, value inventory at whichever is the lower: the actual cost or the net realizable 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 net realizable value, on the other hand, is more complicated. As you have already noticed, this value is the estimated selling price minus any estimated costs to complete and sell) the item. This net realizable value is then compared to the actual cost in determining the lower-of-cost-or-net realizable value.**

**Refer to Item A on the attached schedule. The values for the cost and net realizable value are ¥7.50, and ¥9.00 (¥10.50 – ¥1.50), respectively. Compare the net realizable value with the actual cost, 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 9-11 (Continued)**

Proceed in the same way, always choosing the lowest among cost, and net realizable value.

After you have aggregated the total lower-of-cost-or-net realizable value for all items, you will be likely to have a loss on inventory which must be accounted for. In our example, the loss is ¥790. You can journalize this loss in one of two ways:

Cost of Goods Sold.....	790	
Allowance to Reduce Inventory to NRV .....		790

or

Loss Due to Decline of Inventory to NRV .....	790	
Allowance to Reduce Inventory to NRV .....		790

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

**Schedule A**

Item	On Hand Quantity	Cost	NRV	Lower-of- Cost- or-NRV
A	1,100	¥7.50	¥9.00	¥7.50
B	800	8.20	8.10	8.10
C	1,000	5.60	5.45	5.45
D	1,000	3.80	4.50	3.80
E	1,400	6.40	6.00	6.00

**Schedule B**

Item	Cost	Lower-of-Cost-or-NRV	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 ¥8.10 = ¥6,480	¥ 80
C	1,000 X ¥5.60 = ¥5,600	1,000 X ¥5.45 = ¥5,450	¥150
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 ¥6.00 = ¥8,400	¥560
			<u>¥790</u>

# 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-net realizable value method.

**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-net realizable value 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-net realizable value rule and a differentiation of the FIFO 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-net realizable value rule, and the amount that should be used to value inventories. 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.

# SOLUTIONS TO CONCEPTS FOR ANALYSIS

## CA 9-1

- (a) The purpose of using the LCNRV 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 “net realizable value” in LCNRV generally means the estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal.
- (c) The LCNRV 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 net realizable value offset, to some extent, the decreases in net realizable value. The most common practice is, however, to price the inventory on an item-by-item basis. Many companies favor the individual item approach because tax rules in certain jurisdictions 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 statement of financial position purposes.
- (d) Conceptually, the LCNRV 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, 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.

From the standpoint of accounting theory there is little to justify the LCNRV rule. Although conservative from the statement of financial position 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 cost of goods sold method distorts the cost of goods sold and hides the decline in market value.
- (b) If Wright’s cost of goods sold 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.

## CA 9-2 (Continued)

- (c) Conan should use the loss method to disclose the decline in market value and avoid distorting cost of goods sold. However, she faces an ethical dilemma if Wright will not accept the method Conan wants to use. She should consider various alternatives including the extremes of simply accepting her boss's decision to quitting if Wright will not change his mind. Conan should assess the consequences of each possible alternative and weigh them carefully before she decides what to do.

## CA 9-3

- (a) (1) Ogala's inventory should be reported at net realizable value consistent with the LCNRV rule since net realizable value is below original cost.
- (2) The LCNRV rule is used to report the inventory in the statement of financial position 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 Ogala used the average cost inventory method in a period of declining prices. Inventory quantities increased and average cost associates the all purchase prices with inventory. However, in this instance, there would have been no effect on ending inventory or cost of goods sold had Ogala used the average inventory method because Ogala's inventory would have been reported at net realizable value according to the LCNRV rule. Net realizable value of the inventory is less than either its average cost or FIFO 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 LCNRV. 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).

- (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.

## CA 9-4 (Continued)

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 LCNRV.

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) Olson’s inventoriable 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.

## CA 9-5 (Continued)

- (b) (1) The LCNRV rule is used for valuing inventories because of the concept of 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 should be used to value the inventories because the net realizable value is less than the cost. To carry the inventories at NRV provides a means of measuring residual usefulness of an inventory expenditure.
- (c) Olson'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 conservatism is being followed and a LCNRV 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 affected.
- (b) If the loss is material, new and continuing shareholders are harmed by nonrecognition of the loss. Herman's position as an accounting professional also is affected if he accepts a financial report he knows violates accounting standards.
- (c) If the preponderance of the evidence points to a loss when the purchase is affected, 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 .....	1,000,000	
Purchase Commitment Liability.....		1,000,000

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

## FINANCIAL REPORTING PROBLEM

- (a) Inventories are valued at the lower-of-cost-or-net realisable value using the retail method, which is computed on the basis of selling price less the appropriate trading margin. All inventories are finished goods.
- (b) Inventories are reported on the statement of financial position simply as “Inventories.” The footnotes indicate that all inventories are finished goods.
- (c) The only information given is “The cost of sales above represents cost of inventories recognised as an expense in the year.”
- (d) Inventory turnover = 
$$\frac{\text{Cost of Sales}}{\text{Average Inventory}} = \frac{\text{£5,535.2}}{\frac{\text{£488.9} + \text{£416.3}}{2}}$$
  
 = 12.23 or approximately 30 days to turn its inventory. Turnover remains high.

Its gross profit percentages for 2008 and 2007 are as follows:

	2008	2007
Net sales .....	£9,022.0	£8,588.1
Cost of sales .....	<u>5,535.2</u>	<u>5,246.9</u>
Gross profit .....	<u>£3,486.8</u>	<u>£3,341.2</u>
 Gross profit percentage .....	 <u>38.6%</u>	 <u>38.9%</u>

M&S had a small improvement in its gross profit and and slight decline in gross profit percentage. Sales in 2008 showed a 5.1% increase, due to increased UK locations and strong international performance. It appears that M&S has been able to maintain gross profit percentage on these increased sales.

## COMPARATIVE ANALYSIS CASE

- (a) Cadbury reported inventories of £767 million, which represents 9% of total assets. Nestlé reported inventories of CHF 9,342 million, which represents 9% of its total assets.
- (b) Cadbury determines the cost of its inventories on the basis of average cost; its inventories are valued at the lower-of-cost-or-net realisable value. Nestlé reported that raw materials and purchased finished goods are valued at purchased cost; work in progress and manufactured finished goods are valued at production cost. FIFO and average cost is used.
- (c) Cadbury classifies its inventories as raw materials, and consumables work in progress, and finished goods and goods for resale. Nestlé classifies its inventories as (1) raw materials, work in progress, and sundry supplies, (2) finished goods, and (3) allowance for write-down at net realisable value.
- (d) Inventory turnover ratios and days to sell inventory for 2008:

Cadbury	Nestlé
$\frac{£2,870}{£794^*} = 3.6 \text{ times}$	$\frac{CHF 47,339}{CHF 9,307^{**}} = 5.1 \text{ times}$
$365 \div 3.6 = 101 \text{ days}$	$365 \div 5.1 = 72 \text{ days}$
*(£767 + £821) ÷ 2	**(CHF9,342 + CHF9,272) ÷ 2

A substantial difference between Cadbury and Nestle exists regarding the inventory turnover and related days to sell inventory. A possible reason is that Cadbury is more manufacturing intensive.

## FINANCIAL STATEMENT ANALYSIS CASE

(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

	Statement of Financial Position		Income Statement
	Inventory	Overstated	Cost of goods sold Understated
	Retained earnings	Overstated	Net income Overstated
	Accounts payable	No effect	
	Working capital	Overstated	
	Current ratio	Overstated	

# ACCOUNTING, ANALYSIS, AND PRINCIPLES

## ACCOUNTING

(a)

<u>Item</u>	<u>Units</u>	<u>Cost Per Unit</u>	<u>Total Cost</u>	<u>NRV Per Unit</u>	<u>Total NRV</u>	<u>LCNRV</u>
Residential	500	*	\$245,000*	\$550	\$275,000	\$245,000
Commercial	500	\$1,000	<u>500,000</u>	900	<u>450,000</u>	<u>450,000</u>
			<u>\$745,000</u>		<u>\$725,000</u>	<u>\$695,000</u>

$$\begin{array}{r} *300 \times \$500 = \$150,000 \\ 200 \times \$475 = \quad 95,000 \\ \hline \quad \quad \quad \underline{\$245,000} \end{array}$$

(b) \$725,000 since NRV is less than cost.

## ANALYSIS

The individual product approach is better because Englehart expects that the costs for the commercial pumps to be significantly different and lower than current purchases. However, the costs for the residential pumps are more stable and increasing somewhat.

## PRINCIPLES

- (a) Under U.S. GAAP, the LCNRV as of March 31 is now considered the inventories cost. As a result, inventory may not be written back up to its original cost in subsequent periods.
- (b) Under IFRS, the write-down may be reversed in a subsequent period up to the amount of the previous write-down.
- (c) When reversals are not permitted, the cost of goods sold when the inventory is finally sold reflects the new basis. As a result, gross profits are overstated relative to the gross profit that would be obtained in current operations. The subsequent realization of the reversal is buried within the cost of goods sold.

- (a) The objective of this Standard is to prescribe the accounting treatment for inventories. A primary issue in accounting for inventories is the amount of cost to be recognised as an asset and carried forward until the related revenues are recognised. This Standard provides guidance on the determination of cost and its subsequent recognition as an expense, including any write-down to net realizable value. It also provides guidance on the cost formulas that are used to assign costs to inventories. (IAS 2, paragraph 1).
- (b) Inventories are assets:
- (a) held for sale in the ordinary course of business;
  - (b) in the process of production for such sale; or
  - (c) in the form of materials or supplies to be consumed in the production process or in the rendering of services.
- (IAS 2, paragraph 6)

This Standard applies to all inventories, except:

- (a) work in progress arising under construction contracts, including directly related service contracts (see IAS 11 Construction Contracts);
  - (b) financial instruments (see IAS 32 Financial Instruments: Presentation and IAS 39 Financial Instruments: Recognition and Measurement); and
  - (c) biological assets related to agricultural activity and agricultural produce at the point of harvest (see IAS 41 Agriculture).
- (IAS 2, paragraph 2)
- (c) Net realisable value refers to the net amount that an entity expects to realise from the sale of inventory in the ordinary course of business. Fair value reflects the amount for which the same inventory could be exchanged between knowledgeable and willing buyers and sellers in the marketplace. The former is an entity-specific value; the latter is not. Net realisable value for inventories may not equal fair value less costs to sell. (IAS 2, paragraph 7).

## PROFESSIONAL RESEARCH (Continued)

- (d) This Standard does not apply to the measurement of inventories held by:
- (a) producers of agricultural and forest products, agricultural produce after harvest, and minerals and mineral products, to the extent that they are measured at net realisable value in accordance with well-established practices in those industries. When such inventories are measured at net realisable value, changes in that value are recognised in profit or loss in the period of the change.
  - (b) commodity broker-traders who measure their inventories at fair value less costs to sell. When such inventories are measured at fair value less costs to sell, changes in fair value less costs to sell are recognised in profit or loss in the period of the change.
- (IAS 2, paragraph 3).

## PROFESSIONAL SIMULATION

### Resources

### Journal Entry

Cost of Goods Sold	4,000	
Allowance to Reduce Inventory to NRV		4,000

Note: This entry assumes use of the cost-of-goods-sold method.

### Explanation

Expected selling prices are important in the application of the lower-of-cost-or-net realizable value 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 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.