Intermediate accounting ch 8 assignment

CHAPTER 8 Valuation of Inventories: A Cost-Basis Approach ASSIGNMENT CLASSIFICATION TABLE (BY TOPIC) Topics 1. Inventory accounts; determining quantities, costs, and items to be included in inventory; the inventory equation; balance sheet disclosure. Perpetual vs. periodic. Recording of discounts. Inventory errors. Flow assumptions. 10, 11 7 12, 13, 16, 18, 20 4 5, 6, 7 Questions 1, 2, 3, 4, 5, 6, 8, 9 Brief Exercises 1, 3 Exercises 1, 2, 3, 4, 5, 6, 10 Problems 1, 2, 3 Concepts for Analysis 1, 2, 3, 5, 11 2. 3. 4. 5. 2 , 13, 14, 17 7, 8 2, 3, 4, 5, 10, 11, 12 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 18 4, 5, 6 3 2 1, 4, 5, 6, 7 5, 6, 7, 8 4 6. 7. Inventory accounting changes. Dollar-value LIFO methods. 14, 15, 17, 18, 19 8, 9 7 1, 8, 9, 10, 11 6, 7, 10 8, 9 23, 24, 25, 26 8-1 ASSIGNMENT CLASSIFICATION TABLE (BY LEARNING OBJECTIVE) Learning Objectives 1. 2. 3. 4. 5. Identify major classifications of inventory. Distinguish between perpetual and periodic inventory systems. Identify the effects of inventory errors on the financial statements. Understand the items to include as inventory cost.

Describe and compare the cost flow assumptions used to account for inventories. Explain the significance and use of a LIFO reserve. Understand the effect of LIFO liquidations. Explain the dollar-value LIFO method. Identify the major advantages and disadvantages of LIFO. Understand why companies select given inventory methods. 8, 9 22, 23, 24, 25, 26 1, 8, 9, 10, 11 Brief Exercises 1 2 4 1, 3 5, 6, 7 4, 9, 13, 16, 17, 18, 20 5, 10, 11, 12 1, 2, 3, 4, 5, 6, 7, 8 13, 14, 15, 16, 17, 18, 19, 20, 22 21 1, 2, 3 1, 4, 5, 6, 7 4, 5, 6 Exercises Problems 6. 7. 8. . 10. 8-2 ASSIGNMENT CHARACTERISTICS TABLE Level of Difficulty Moderate Moderate Simple Simple Moderate Simple Simple Simple Moderate Simple Simple Moderate Moderate Moderate

Moderate Moderate Simple Simple Moderate Simple Moderate Moderate Simple Simple Moderate Moderate Moderate Moderate Simple Complex Complex Moderate Moderate Moderate Time (minutes) 15–20 10–15 10–15 10–15 15–20 10–20 10–15 20–25 15–25 10–15 10–15 15–20 15–20 20–25 15–20 15–20 10–15 15–20 15–20 10–15 10–15 25–30 5–10 15–20 20–25 15–20 30–40 25–35 20–25 40–55 40–55 25–35 30–40 30–40

Item E8-1 E8-2 E8-3 E8-4 E8-5 E8-6 E8-7 E8-8 E8-9 E8-10 E8-11 E8-12 E8-13 E8-14 E8-15 E8-16 E8-17 E8-18 E8-19 E8-20 E8-21 E8-22 E8-23 E8-24 E8-25 E8-26 P8-1 P8-2 P8-3 P8-4 P8-5 P8-6 P8-7 P8-8 Description Inventoriable costs. Inventoriable costs. Inventoriable costs. Inventoriable costs—perpetual. Inventoriable costs—error adjustments. Determining merchandise amounts—periodic. Purchases recorded net. Purchases recorded, gross method. Periodic versus perpetual entries. Inventory errors, periodic. Inventory errors. Inventory errors. FIFO and LIFO—periodic and perpetual.

FIFO, LIFO and average cost determination. FIFO, LIFO, average cost inventory. Compute FIFO, LIFO, average cost—periodic. FIFO and LIFO; periodic and perpetual. FIFO and LIFO; income statement presentation. FIFO and LIFO effects. FIFO and LIFO—periodic. LIFO effect. Alternate inventory methods—comprehensive. Dollar-value LIFO. Dollar-value LIFO. Dollar-value LIFO. Dollar-value LIFO. Various inventory issues. Inventory adjustments. Purchases recorded gross and net. Compute FIFO, LIFO, and average cost—periodic and perpetual. Compute FIFO, LIFO, and average cost—periodic and perpetual.

Compute FIFO, LIFO, and average cost—periodic and perpetual. Financial statement effects of FIFO and LIFO. Dollar-value LIFO. 8-3 ASSIGNMENT CHARACTERISTICS TABLE (Continued) Item P8-9 P8-10 P8-11 CA8-1 CA8-2 CA8-3 CA8-4 CA8-5 CA8-6 CA8-7 CA8-8 CA8-9 CA8-10 CA8-11 Description Internal indexes—dollar-value LIFO. Internal indexes—dollar-value LIFO. Dollar-value LIFO. Inventoriable costs. Inventoriable costs. Inventoriable costs. Accounting treatment of purchase discounts. General inventory issues. LIFO inventory advantages. Average cost, FIFO, and LIFO. LIFO application and advantages. Dollar-value LIFO issues.

FIFO and LIFO. LIFO Choices—Ethical Issues Level of Difficulty Moderate Complex Moderate Moderate Moderate Moderate Simple Moderate Simple Simple Moderate Moderate Moderate Moderate Time (minutes) 25–35 30–35 40–50 15–20 15–25 25–35 15–25 20–25 15–20 15–20 25–30 25–30 30–35 20–25 8-4 ANSWERS TO QUESTIONS 1. In a retailing concern, inventory normally consists of only one category, that is the product awaiting resale. In a manufacturing enterprise, inventories consist of raw materials, work in process, and finished goods. Sometimes a manufacturing or factory supplies inventory account is also included. a) Inventories are unexpired costs and represent future benefits to the owner. A statement of financial position includes a listing of all unexpired costs (assets) at a specific point in time. Because inventories are assets owned at the specific point in time for which a statement of financial position is prepared, they must be included in order that the owners’ financial position will be presented fairly. (b) Beginning and ending inventories are included in the computation of net income only for

the purpose of arriving at the cost of goods sold during the period of time covered by the statement.

Goods included in the beginning inventory which are no longer on hand are expired costs to be matched against revenues earned during the period. Goods included in the ending inventory are unexpired costs to be carried forward to a future period, rather than expensed. 3. In a perpetual inventory system, data are available at any time on the quantity and dollar amount of each item of material or type of merchandise on hand. A physical inventory means that inventory is periodically counted (at least once a year) but that up-to-date records are not necessarily maintained.

Discrepancies often occur between the physical count and the perpetual records because of clerical errors, theft, waste, misplacement of goods, etc. 4. No. Mariah Carey, Inc. should not report this amount on its balance sheet. As consignee, it does not own this merchandise and therefore it is inappropriate for it to recognize this merchandise as part of its inventory. Product financing arrangements are essentially off-balance-sheet financing devices. These arrangements make it appear that a company has sold its inventory or never taken title to it so they can keep loans off their balance sheet.

A product financing arrangement should not be recorded as a sale. Rather, the inventory and related liability should be reported on the balance sheet. (a) (b) (c) (d) (e) (f) Inventory. Not shown, possibly in a note to the financial statements if material. Inventory. Inventory, separately disclosed as raw materials. Not shown, possibly a note to the financial statements. Inventory

or manufacturing supplies. 2. 5. 6. 7. This omission would have no effect upon the net income for the year, since the purchases and the ending inventory are understated in the same amount.

With respect to financial position, both the inventory and the accounts payable would be understated. Materiality would be a factor in determining whether an adjustment for this item should be made as omission of a large item would distort the amount of current assets and the amount of current liabilities. It, therefore, might influence the current ratio to a considerable extent. Cost, which has been defined generally as the price paid or consideration given to acquire an asset, is the primary basis for accounting for inventories.

As applied to inventories, cost means the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location. These applicable expenditures and charges include all acquisition and production costs but exclude all selling expenses and that portion of general and administrative expenses not clearly related to production. Freight charges applicable to the product are considered a cost of the goods. 8-5 8. Questions Chapter 8 (Continued) 9. By their nature, product costs “ attach” to the inventory and are recorded in the inventory account.

These costs are directly connected with the bringing of goods to the place of business of the buyer and converting such goods to a salable condition. Such charges would include freight charges on goods purchased, other direct costs of acquisition, and labor and other production costs incurred in

processing the goods up to the time of sale. Period costs are not considered to be directly related to the acquisition or production of goods and therefore are not considered to be a part of inventories. Conceptually, these expenses are as much a cost of the product as the initial purchase price and related freight charges attached to the product.

While selling expenses are generally considered as more directly related to the cost of goods sold than to the unsold inventory, in most cases, though, the costs, especially administrative expenses, are so unrelated or indirectly related to the immediate production process that any allocation is purely arbitrary. Interest costs are considered a cost of financing and are generally expensed as incurred, when related to getting inventories ready for sale. 10. Cash discounts (purchase discounts) should not be accounted for as financial income when payments are made.

Income should be recognized when the earning process is complete (when the company sells the inventory). Furthermore, a company does not earn revenue from purchasing goods. Cash discounts should be considered as a reduction in the cost of the items purchased. 11. $100. 00, $105. 00, $103. 00. (Transportation-In not included for discount.) 12. Arguments for the specific identification method are as follows: (1) It provides an accurate and ideal matching of costs and revenues because the cost is specifically identified with the sales price. 2) The method is realistic and objective since it adheres to the actual physical flow of goods rather than an artificial flow of costs. (3) Inventory is valued at actual cost instead of an assumed cost. Arguments against the specific identification method include the following: (1) (2) (3) (4) The cost of using it restricts its use to goods of high unit value.

The method is impractical for manufacturing processes or cases in which units are commingled and identity lost. It allows an artificial determination of income by permitting arbitrary selection of the items to be sold from a homogeneous group.

It may not be a meaningful method of assigning costs in periods of changing price levels. 13. The first-in, first-out method approximates the specific identification method when the physical flow of goods is on a FIFO basis. When the goods are subject to spoilage or deterioration, FIFO is particularly appropriate. In comparison to the specific identification method, an attractive aspect of FIFO is the elimination of the danger of artificial determination of income by the selection of advantageously priced items to be sold. The basic assumption is that costs should be charged in the order in which they are incurred.

As a result, the inventories are stated at the latest costs. Where the inventory is consumed and valued in the FIFO manner, there is no accounting recognition of 8-6 Questions Chapter 8 (Continued) unrealized gain or loss. A criticism of the FIFO method is that it maximizes the effects of price fluctuations upon reported income because current revenue is matched with the oldest costs which are probably least similar to current replacement costs. On the other hand, this method produces a balance sheet value for the asset close to current replacement costs.

It is claimed that FIFO is deceptive when used in a period of rising prices because the reported income is not fully available since a part of it must be used to replace inventory at higher cost. The results achieved by the

weighted average method resemble those of the specific identification method where items are chosen at random or there is a rapid inventory turnover. Compared with the specific identification method, the weighted average method has the advantage that the goods need not be individually identified; therefore accounting is not so costly and the method can be applied to fungible goods.

The weighted average method is also appropriate when there is no marked trend in price changes. In opposition, it is argued that the method is illogical. Since it assumes that all sales are made proportionally from all purchases and that inventories will always include units from the first purchases, it is argued that the method is illogical because it is contrary to the chronological flow of goods. In addition, in periods of price changes there is a lag between current costs and costs assigned to income or to the valuation of inventories.

If it is assumed that actual cost is the appropriate method of valuing inventories, last-in, first-out is not theoretically correct. In general, LIFO is directly adverse to the specific identification method because the goods are not valued in accordance with their usual physical flow. An exception is the application of LIFO to piled coal or ores which are more or less consumed in a LIFO manner. Proponents argue that LIFO provides a better matching of current costs and revenues.

During periods of sharp price movements, LIFO has a stabilizing effect upon reported income figures because it eliminates paper income and losses on inventory and smooths the impact of income taxes. LIFO opponents object to the method principally because the inventory valuation reported in the

balance sheet could be seriously misleading. The profit figures can be artificially influenced by management through contracting or expanding inventory quantities. Temporary involuntary depletion of LIFO inventories would distort current income by the previously unrecognized price gains or losses applicable to the inventory reduction. 14.

A company may obtain a price index from an outside source (external index) —the government, a trade association, an exchange—or by computing its own index (internal index) using the double extension method. Under the double extension method the ending inventory is priced at both base-year costs and at current-year costs, with the total current cost divided by the total base cost to obtain the current year index. 15. Under the double extension method, LIFO inventory is priced at both base-year costs and currentyear costs. The total current-year cost of the inventory is divided by the total base-year cost to obtain the current-year index.

The index for the LIFO pool consisting of product A and product B is computed as follows: Base-Year Cost Product Units Unit Total A 25, 500 $10. 20 $260, 100 B 10, 350 $37. 00 382, 950 December 31, 2007 inventory $643, 050 Current-Year Cost Base-Year Cost = $956, 460 $643, 050 Current-Year Cost Unit Total $19. 00 $484, 500 $45. 60 471, 960 $956, 460 = 148. 74, index at 12/31/07. 8-7 Questions Chapter 8 (Continued) 16. The LIFO method results in a smaller net income because later costs, which are higher than earlier costs, are matched against revenue.

Conversely, in a period of falling prices, the LIFO method would result in a higher net income because later costs in this case would be lower than

earlier costs, and these later costs would be matched against revenue. 17. The dollar-value method uses dollars instead of units to measure increments, or reductions in a LIFO inventory. After converting the closing inventory to the same price level as the opening inventory, the increases in inventories, priced at base-year costs, is converted to the current price level and added to the opening inventory. Any decrease is subtracted at base-year costs to determine the ending inventory. The rincipal advantage is that it requires less record-keeping. It is not necessary to keep records nor make calculations of opening and closing quantities of individual items. Also, the use of a base inventory amount gives greater flexibility in the makeup of the base and eliminates many detailed calculations. The unit LIFO inventory costing method is applied to each type of item in an inventory. Any type of item removed from the inventory base (e. g. , magnets) and replaced by another type (e. g. , coils) will cause the old cost (magnets) to be removed from the base and to be replaced by the more current cost of the other item (coils).

The dollar-value LIFO costing method treats the inventory base as being composed of a base of cost in dollars rather than of units. Therefore a change in the composition of the inventory (less magnets and more coils) will not change the cost of inventory base so long as the amount of the inventory stated in base-year dollars does not change. 18. (a) LIFO layer—a LIFO layer (increment) is formed when the ending inventory at base-year prices exceeds the beginning inventory at base-year prices. (b) LIFO reserve —the difference between the inventory method used for internal purposes and LIFO. c) LIFO effect—the change in the LIFO reserve (Allowance to

Reduce Inventory to LIFO) from one period to the next. 19. December 31, 2007 inventory at December 31, 2006 prices, $1, 026, 000 ? 1. 08 Less: Inventory, December 31, 2006 Increment added during 2007 at base prices Increment added during 2007 at December 31, 2007 prices, $150, 000 X 1. 08 Add: Inventory at December 31, 2006 Inventory, December 31, 2007, under dollar-value LIFO method $950, 000 800, 000 $150, 000 $162, 000 800, 000 $962, 000 20. Phantom inventory profits occur when the inventory costs matched against sales are less than the replacement cost of the inventory.

The costs of goods sold therefore is understated and profit is considered overstated. Phantom profits are said to occur when FIFO is used during periods of rising prices. High inventory profits through involuntary liquidation occur if a company is forced to reduce its LIFO base or layers. If the base or layers of old costs are eliminated, strange results can occur because old, irrelevant costs can be matched against current revenues. A distortion in reported income for a given period may result, as well as consequences that are detrimental from an income tax point of view. -8 SOLUTIONS TO BRIEF EXERCISES BRIEF EXERCISE 8-1 Billie Joel Company Balance Sheet (Partial) December 31 Current assets Cash

..... Receivables (net)

..... Inventories Finished goods

..... Work in

process..... Raw materials

..... Prepaid insurance

.....

Total current assets..... $150, 000 200, 000 335, 000 685, 000 41, 000 $1, 316, 000 $ 190, 000 400, 000 BRIEF EXERCISE 8-2

Inventory (150 X $30)..... Accounts Payable..... Accounts Payable (6 X $30) .....

Inventory..... Accounts Receivable (125 X $50).....

Sales.....

Cost of Goods Sold (125 X $30).....

Inventory..... 8-9 4, 500 4, 500 180 180 6, 250 6, 250 3, 750 3, 750 BRIEF EXERCISE 8-3 December 31 inventory per physical count Goods-in-transit purchased FOB shipping point Goods-in-transit sold FOB destination December 31 inventory $200, 000 15, 000 22, 000 $237, 000 BRIEF EXERCISE 8-4 Cost of goods sold as reported Overstatement of 12/31/06 inventory Overstatement of 12/31/07 inventory Corrected cost of goods sold 12/31/07 retained earnings as reported Overstatement of 12/31/07 inventory

Corrected 12/31/07 retained earnings $1, 400, 000 (110, 000) 45, 000 $1, 335, 000 $5, 200, 000 (45, 000) $5, 155, 000 BRIEF EXERCISE 8-5 $11, 850 1, 000 Weighted average cost per unit Ending inventory 300 X $11. 85 = Cost of goods available for sale Deduct ending inventory Cost of goods sold (700 X $11. 85) = $11. 85 $3, 555 $11, 850 3, 555 $ 8, 295 8-10 BRIEF EXERCISE 8-6 Ending inventory (April 23) 300 X $13 = $3, 900 $11, 850 3, 900 $ 7, 950 Cost of goods available for sale Deduct ending inventory Cost of goods sold

BRIEF EXERCISE 8-7 April 1 April 15 Ending inventory Cost of goods available for sale Deduct ending inventory Cost of goods sold 250 X $10 = 50 X $12 = $2, 500 600 $3, 100 $11, 850 3, 100 $ 8, 750 BRIEF EXERCISE 8-8 2005 2006 $123, 200 ? 1. 10 = $112, 000 $100, 000 X 1. 00 $12, 000* X 1. 10 *$112, 000 – $100, 000 2007 $134, 560 ? 1. 16 = $116, 000 $100, 000 X 1. 00 $12, 000 X 1. 10 $4, 000** X 1. 16 **$116, 000 – $112, 000 8-11 $100, 000 $100, 000 13, 200 $113, 200 $100, 000 13, 200 4, 640 $117, 840 BRIEF EXERCISE 8-9 2006 inventory at base amount ($21, 708 ? 1. 08) 2005 inventory at base amount Increase in base inventory 2006 inventory under

LIFO Layer one Layer two $19, 750 X 1. 00 $ 350 X 1. 08 $19, 750 378 $20, 128 2007 inventory at base amount ($25, 935 ? 1. 14) 2006 inventory at base amount Increase in base inventory 2007 inventory under LIFO Layer one Layer two Layer three $19, 750 X 1. 00 $ 350 X 1. 08 $ 2, 650 X 1. 14 $19, 750 378 3, 021 $23, 149 $22, 750 20, 100 $ 2, 650 $20, 100 (19, 750) $ 350 8-12 SOLUTIONS TO EXERCISES EXERCISE 8-1 (15–20 minutes) Items 1, 3, 5, 8, 11, 13, 14, 16, and 17 would be reported as inventory in the financial statements. The following items would not be reported as inventory: 2.

Cost of goods sold in the income statement. 4. Not reported in the financial statements. 6. Cost of goods sold in the income statement. 7. Cost of goods sold in the income statement. 9. Interest expense in the income statement. 10. Advertising expense in the income statement. 12. Office supplies in the current assets section of the balance sheet. 15. Not reported in the financial statements. 18. Short-term investments in the current asset section of the balance sheet. EXERCISE 8-2 (10–15 minutes) Inventory per physical count Goods in transit to customer, f. . b. destination Goods in transit from vendor,

f. o. b. seller Inventory to be reported on balance sheet $441, 000 + 38, 000 + 51, 000 $530, 000 The consigned goods of $61, 000 are not owned by Jose Oliva and were properly excluded. The goods in transit to a customer of $46, 000, shipped f. o. b. shipping point, are properly excluded from the inventory because the title to the goods passed when they left the seller (Oliva) and therefore a sale and related cost of goods sold should be recorded in 2007. The goods in transit from a vendor of $83, 000, shipped f. o. b. estination, are properly excluded from the inventory because the title to the goods does not pass to Oliva until the buyer (Oliva) receives them. 8-13 EXERCISE 8-3 (10–15 minutes) 1. 2. 3. Include. Merchandise passes to customer only when it is shipped. Do not include. Title did not pass until January 3. Include in inventory. Product belonged to Harlowe Inc. at December 31, 2007. 4. Include in inventory. Under invoice terms, title passed when goods were shipped. Do not include. Goods received on consignment remain the property of the consignor. 5. EXERCISE 8-4 (10–15 minutes) 1.

Raw Materials Inventory ..... Accounts Payable ..... 2. Raw Materials Inventory ..... Accounts Payable ..... No adjustment necessary. Accounts Payable ..... Raw Materials Inventory..... 5. Raw Materials Inventory ..... Accounts Payable 19, 800 19, 800 7, 500 7, 500 28, 000 28, 000 8, 100 8, 100 3. 4. 8-14

EXERCISE 8-5 (15–20 minutes) (a) Inventory December 31, 2007 (unadjusted) Transaction 2 Transaction 3 Transaction 4 Transaction 5 Transaction 6 Transaction 7 Transaction 8 Inventory December 31, 2007

(adjusted) (b) Transaction 3

Sales..... Accounts Receivable ..... (To reverse sale entry in 2007) Transaction 4 Purchases (Inventory) ..... Accounts Payable ..... (To record purchase of merchandise in 2007) Transaction 8 Sales Returns and Allowances.....

Accounts Receivable ..... 2, 600 2, 600 15, 630 15, 630 $234, 890 13, 420 -0-08, 540 (10, 438) (10, 520) 1, 500 $237, 392 12, 800 12, 800 8-15 EXERCISE 8-6 (10–20 minutes) 2005 Sales Sales Returns Net Sales Beginning Inventory Ending Inventory Purchases Purchase Returns and Allowances Transportation-in Cost of Good Sold Gross Profit $290, 000 11, 000 279, 000 20, 000 32, 000* 242, 000 5, 000 8, 000 233, 000 46, 000 2006 $360, 000 13, 000 347, 000 32, 000 37, 000 260, 000 8, 000 9, 000 256, 000 91, 000 2007 $410, 000 20, 000 390, 000 37, 000** 44, 000 298, 000 10, 000 12, 000 293, 000 97, 000 *This was given as the beginning inventory for 2006. *This was calculated as the ending inventory for 2006. EXERCISE 8-7 (10–15 minutes) (a) May 10 Purchases ..... Accounts Payable ..... ($15, 000 X . 98) May 11 Purchases ..... Accounts Payable ..... ($13, 200 X . 99) May 19 Accounts Payable..... Cash..... May 24 Purchases ..... Accounts Payable ($11, 500 X . 98)..... 8-16 14, 700 14, 700 13, 068 13, 068 14, 700 14, 700 11, 270 11, 270

EXERCISE 8-7 (Continued) (b) May 31 Purchase Discounts Lost ..... Accounts Payable ($13, 200 X . 01) ..... (Discount lost on purchase of May 11, $13, 200, terms 1/15, n/30) EXERCISE 8-8 (a) Feb. 1 Inventory [$10, 800 – ($10, 800 X 10%)]..... Accounts Payable..... Feb. 4 Accounts Payable [$2, 500 – ($2, 500 X 10%)] ..... Inventory..... Feb. 13 Accounts Payable ($9, 720 – $2, 250) ..... Inventory (3% X $7, 470) .....

Cash ..... (b) Feb. 1 Purchases [$10, 800 – ($10, 800 X 10%)] ..... Accounts Payable..... Accounts Payable [$2, 500 – ($2, 500 X 10%)] ..... Purchase Returns and Allowances ..... Feb. 13 Accounts Payable ($9, 720 – $2, 250) ..... Purchase Discounts (3% X $7, 470)..... Cash ..... 8-17 132 132 9, 720 9, 720 2, 250 2, 250 7, 470 224. 10 7, 245. 90 9, 720 9, 720 Feb. 4 2, 250 2, 250 7, 470 224. 10 7, 245. 90

EXERCISE 8-8 (Continued) (c) Purchase price (list) Less: Trade discount (10% X $10, 800) Price on which cash discount based Less: Cash discount (3% X $9, 720) Net price EXERCISE 8-9 (15–25 minutes) (a) Jan. 4 Accounts Receivable..... Sales (80 X $8)..... Jan. 11 Purchases ($150 X $6)..... Accounts Payable ..... Accounts Receivable..... Sales (120 X $8. 75)..... Jan. 20 Purchases (160 X $7) ..... Accounts Payable ..... Accounts Receivable.....

Sales (100 X $9) ..... Jan. 31 Inventory ($7 X 110) ..... Cost of Goods Sold..... Purchases ($900 + $1, 120) ..... Inventory (100 X $5)..... *($500 + $2, 020 – $770) 770 1, 750* 2, 020 500 1, 120 1, 120 900 900 900 900 1, 050 1, 050 640 640 $10, 800 1, 080 9, 720 291. 60 $ 9, 428. 40 Jan. 13 Jan. 27 8-18 EXERCISE 8-9 (Continued) (b) Sales ($640 + $1, 050 + $900) Cost of goods sold Gross profit Jan. 4 $2, 590 1, 750 $ 840 640 640 400 400 900 900 1, 050 1, 050 700 700 1, 120 1, 120 900 900 650 650 (c) Accounts Receivable .....

Sales (80 X $8) ..... Cost of Goods Sold ..... Inventory (80 X $5) ..... Jan. 11 Inventory ..... Accounts Payable (150 X $6) ..... Accounts Receivable ..... Sales (120 X $8. 75) ..... Cost of Goods Sold ..... Inventory ([(20 X $5) + (100 X $6)] ..... Jan. 13 Jan. 20 Inventory ..... Accounts Payable (160 X $7) ..... Accounts Receivable ..... Sales (100 X $9) ..... Cost of Goods Sold ..... Inventory [(50 X $6) + (50 X $7)] ..... Jan. 27 (d) Sales Cost of goods sold ($400 + $700 +$650) Gross profit 8-19 $2, 590 1, 750 $ 840 EXERCISE 8-10 (10–15 minutes) Current Year Overstated Overstated Overstated Overstated No effect Overstated* No effect No effect Overstated Overstated Overstated Overstated Subsequent Year No effect No effect No effect Understated No effect No effect No effect No effect No effect No effect No effect Understated . Working capital Current ratio Retained earnings Net

income Working capital Current ratio Retained earnings Net income Working capital Current ratio Retained earnings Net income 2. 3. *Assume that the correct current ratio is greater than one. EXERCISE 8-11 (10–15 minutes) (a) $370, 000 = 1. 85 to 1 $200, 000 $370, 000 + $22, 000 – $13, 000 + $3, 000 $382, 000 = = 2. 06 to 1 $200, 000 – $15, 000 $185, 000 Adjust Income Increase (Decrease) $22, 000 15, 000 (13, 000) (b) (c) 1. 2. 3. 4.

Event Understatement of ending inventory Overstatement of purchases Overstatement of ending inventory Overstatement of advertising expense; understatement of cost of goods sold Effect of Error Decreases net income Decreases net income Increases net income 0 $24, 000 8-20 EXERCISE 8-12 (15–20 minutes) Errors in Inventories Net Income Year 2002 2003 2004 2005 2006 2007 Per Books $ 50, 000 52, 000 54, 000 56, 000 58, 000 60, 000 $330, 000 2, 000 8, 000 $3, 000 9, 000 $11, 000 2, 000 Add Overstatement Jan. 1 Deduct Understatement Jan. 1 Deduct OverstateAdd UnderstateCorrected Net Income $ 47, 000 46, 000 $11, 000 74, 000 45, 000 60, 000 50, 000 $322, 000 ent Dec. 31 ment Dec. 31 $3, 000 9, 000 EXERCISE 8-13 (15–20 minutes) (a) (1) Cost of Goods Sold LIFO 500 @ $13 = 500 @ $12 = $ 6, 500 6, 000 $12, 500 $ 3, 000 8, 400 $11, 400 Ending Inventory 300 @ $10 = 300 @ $12 = $3, 000 3, 600 $6, 600 $6, 500 1, 200 $7, 700 (2) FIFO 300 @ $10 = 700 @ $12 = 500 @ $13 = 100 @ $12 = (b) LIFO 100 @ $10 = 300 @ $12 = 200 @ $13 = $ 1, 000 3, 600 2, 600 $ 7, 200 8-21 EXERCISE 8-13 (Continued) (c) Sales Cost of Goods Sold Gross Profit (FIFO) $25, 400 = ($24 X 200) + ($25 X 500) + ($27 X 300) 11, 400 $14, 000 Note: FIFO periodic and FIFO perpetual provide the same gross profit and inventory value. d) LIFO matches more current costs with revenue. When

prices are rising (as is generally the case), this results in a higher amount for cost of goods sold and a lower gross profit. As indicated in this exercise, prices were rising and cost of goods sold under LIFO was higher. EXERCISE 8-14 (20–25 minutes) (a) (1) LIFO 600 @ $6. 00 = $3, 600 100 @ $6. 08 = 608 $4, 208 (2) Average cost Total cost Total units $33, 655* 5, 300 = = $6. 35 average cost per unit 700 @ $6. 35 = $4, 445 8-22 EXERCISE 8-14 (Continued) *Units 600 1, 500 800 1, 200 700 500 5, 300 (b) (1) FIFO 500 @ $6. 79 = $3, 395 200 @ $6. 0 = 1, 320 $4, 715 (2) LIFO 100 @ $6. 00 = $ 600 100 @ $6. 08 = 608 500 @ $6. 79 = 3, 395 $4, 603 (c) Total merchandise available for sale Less inventory (FIFO) Cost of goods sold $33, 655 4, 715 $28, 940 @ @ @ @ @ Price $6. 00 $6. 08 $6. 40 $6. 50 $6. 60 $6. 79 = = = = = Total Cost $ 3, 600 9, 120 5, 120 7, 800 4, 620 3, 395 $33, 655 (d) FIFO. 8-23 EXERCISE 8-15 (15–20 minutes) (a) Shania Twain Company COMPUTATION OF INVENTORY FOR PRODUCT BAP UNDER FIFO INVENTORY METHOD March 31, 2007 Units 600 800 200 1, 600 Unit Cost $12. 00 11. 00 10. 00 Total Cost $ 7, 200 8, 800 2, 000 $18, 000

March 26, 2007 February 16, 2007 January 25, 2007 (portion) March 31, 2007, inventory (b) Shania Twain Company COMPUTATION OF INVENTORY FOR PRODUCT BAP UNDER LIFO INVENTORY METHOD March 31, 2007 Units 600 1, 000 1, 600 Unit Cost $8. 00 9. 00 Total Cost $ 4, 800 9, 000 $13, 800 Beginning inventory January 5, 2007 (portion) March 31, 2007, inventory (c) Shania Twain Company COMPUTATION OF INVENTORY FOR PRODUCT BAP UNDER WEIGHTED AVERAGE INVENTORY METHOD March 31, 2007 Units 600 1, 200 1, 300 800 600 4, 500 Unit Cost $ 8. 00 9. 00 10. 00 11. 00 12. 00 Total Cost $ 4, 800 10, 800 13, 000 8, 800 7, 200 $44, 600

Beginning inventory January 5, 2007 January 25, 2007 February 16, 2007 March 26, 2007 Weighted average cost ($44, 600 ? 4, 500) March 31, 2007, inventory *Rounded off. 1, 600 $ 9. 91* $ 9. 91 $15, 856 8-24 EXERCISE 8-16 (15–20 minutes) (a) (1) 2, 100 units available for sale – 1, 400 units sold = 700 units in the ending inventory. 500 @ $4. 58 = $2, 290 200 @ 4. 60 = 920 700 $3, 210 Ending inventory at FIFO cost. (2) 100 @ $4. 10 = 600 @ 4. 20 = 700 $ 410 2, 520 $2, 930 Ending inventory at LIFO cost. (3) $9, 240 cost of goods available for sale ? 2, 100 units available for sale = $4. 40 weighted-average unit cost. 00 units X $4. 40 = $3, 080 Ending inventory at weighted-average cost. (b) (1) LIFO will yield the lowest gross profit because this method will yield the highest cost of goods sold figure in the situation presented. The company has experienced rising purchase prices for its inventory acquisitions. In a period of rising prices, LIFO will yield the highest cost of goods sold because the most recent purchase prices (which are the higher prices in this case) are used to price cost of goods sold while the older (and lower) purchase prices are used to cost the ending inventory. 2) LIFO will yield the lowest ending inventory because LIFO uses the oldest costs to price the ending inventory units. The company has experienced rising purchase prices. The oldest costs in this case are the lower costs. 8-25 EXERCISE 8-17 (10–15 minutes) (a) (1) 400 @ $30 = 160 @ $25 = $12, 000 4, 000 $16, 000 (2) 400 @ $20 = 160 @ $25 = $ 8, 000 4, 000 $12, 000 (b) (1) (2) FIFO LIFO $16, 000 [same as (a)] 100 @ $20 = 60 @ $25 = 400 @ $30 = $ 2, 000 1, 500 12, 000 $15, 500 8-26 EXERCISE 8-18 (15–20 minutes) First-in, first-out Sales Cost of goods sold: Inventory, Jan. Purchases Cost of goods available Inventory, Dec. 31 Cost of goods sold Gross profit Operating expenses Net income $120, 000 592, 000* 712, 000 235, 000** 477, 000

573, 000 200, 000 $ 373, 000 $1, 050, 000 $120, 000 592, 000 712, 000 164, 000*** 548, 000 502, 000 200, 000 $ 302, 000 Last-in, first-out $1, 050, 000 *Purchases 6, 000 @ $22 = 10, 000 @ $25 = 7, 000 @ $30 = $132, 000 250, 000 210, 000 $592, 000 **Computation of inventory, Dec. 31: First-in, first-out: 7, 000 units @ $30 = 1, 000 units @ $25 = $210, 000 25, 000 $235, 000 ***Last-in, first-out: 6, 000 units @ $20 = 2, 000 units @ $22 = $120, 000 44, 000 $164, 000 8-27

EXERCISE 8-19 (20–25 minutes) Sandy Alomar Corporation SCHEDULES OF COST OF GOODS SOLD For the First Quarter Ended March 31, 2007 Schedule 1 First-in, First-out Beginning inventory Plus purchases Cost of goods available for sale Less ending inventory Cost of goods sold $ 40, 000 146, 200* 186, 200 61, 300 $124, 900 Schedule 2 Last-in, First-out $ 40, 000 146, 200 186, 200 56, 800 $129, 400 *($33, 600 + $25, 500 + $38, 700 + $48, 400) Schedules Computing Ending Inventory Units Beginning inventory Plus purchases Units available for sale Less sales ($150, 000 ? 5) Ending inventory 10, 000 34, 000 44, 000 30, 000 14, 000

The unit computation is the same for both assumptions, but the cost assigned to the units of ending inventory are different. First-in, First-out (Schedule 1) 11, 000 3, 000 14, 000 at $4. 40 = at $4. 30 = $48, 400 12, 900 $61, 300 Last-in, First-out (Schedule 2) 10, 000 at $4. 00 = 4, 000 at $4. 20 = 14, 000 $40, 000 16, 800 $56, 800 8-28 EXERCISE 8-20 (10–15 minutes) (a) FIFO Ending Inventory 12/31/07 $ 827. 64 76 @ $10. 89* = 24 @ $11. 88** = 285. 12 $1, 112. 76 *[$11. 00 – . 01 ($11. 00)] **[$12. 00 – . 01 ($12. 00)] (b) LIFO Cost of Goods Sold—2007 76 @ $10. 89 = $ 827. 64 84 @ $11. 88 = 997. 92 90 @ $14. 85* = 1, 336. 50 15 @ $15. 84** = 237. 0 $3, 399.

66 *[$15. 00 – . 01 ($15)] **[$16. 00 – . 01 ($16)] (c) FIFO matches older costs with revenue. When prices are declining, as in this case, this results in a higher amount for cost of goods sold. Therefore, it is recommended that FIFO be used by Howie Long Shop to minimize taxable income. EXERCISE 8-21 (10–15 minutes) (a) The difference between the inventory used for internal reporting purposes and LIFO is referred to as the Allowance to Reduce Inventory to LIFO or the LIFO reserve. The change in the allowance balance from one period to the next is called the LIFO effect (or as shown in this example, the LIFO adjustment).

LIFO subtracts inflation from inventory costs by charging the items purchased recently to cost of goods sold. As a result, ending inventory (assuming increasing prices) will be lower than FIFO or average cost. 8-29 (b) EXERCISE 8-21 (Continued) (c) Cash flow was computed as follows: Revenue $3, 200, 000 Cost of goods sold (2, 800, 000) Operating expenses (150, 000) Income taxes (75, 600) Cash flow $ 174, 400 If the company has any sales on account or payables, then the cash flow number is incorrect. It is assumed here that the cash basis of accounting is used. (d) The company has extra cash because its taxes are less.

The reason taxes are lower is because cost of goods sold (in a period of inflation) is higher under LIFO than FIFO. As a result, net income is lower which leads to lower income taxes. If prices are decreasing, the opposite effect results. EXERCISE 8-22 (25–30 minutes) (a) (1) Ending inventory—Specific Identification Date No. Units Unit Cost December 2 July 20 100 50 150 $30 25 Total Cost $3, 000 1, 250 $4, 250 (2) Ending inventory—FIFO Date No. Units December 2 September 4 100 50 150 Unit Cost $30 28 Total

Cost $3, 000 1, 400 $4, 400 (3) Ending inventory—LIFO Date No. Units January 1 March 15 100 50 150

Unit Cost $20 24 Total Cost $2, 000 1, 200 $3, 200 8-30 EXERCISE 8-22 (Continued) (4) Ending inventory—Average Cost Date January 1 March 15 July 20 September 4 December 2 Explanation Beginning inventory Purchase Purchase Purchase Purchase No. Units 100 300 300 200 100 1, 000 Unit Cost $20 24 25 28 30 Total Cost $ 2, 000 7, 200 7, 500 5, 600 3, 000 $25, 300 $25, 300 ? 1, 000 = $25. 30 Ending Inventory—Average Cost No. Units 150 (b) Unit Cost $25. 30 Total Cost $3, 795 Double Extension Method Base-Year Costs Current Costs Total $3, 000 Units 100 50 Current-Year Cost Per Unit $30 $28 Total $3, 000 1, 400 $4, 400 Units 150

Base-Year Cost Per Unit $20 Ending Inventory for the Period at Current Cost Ending Inventory for the Period at Base-Year Cost = $4, 400 = 1. 4667 $3, 000 $3, 000 2, 000 1, 000 1. 4667 1, 467 2, 000 $3, 467 Ending inventory at base-year prices ($4, 400 ? 1. 4667) Base layer (100 units at $20) Increment in base-year dollars Current index Increment in current dollars Base layer (100 units at $20) Ending inventory at dollar-value LIFO 8-31 EXERCISE 8-23 (5–10 minutes) $97, 000 – $92, 000 = $5, 000 increase at base prices. $98, 350 – $92, 600 = $5, 750 increase in dollar-value LIFO value. $5, 000 X Index = $5, 750.

Index = $5, 750 ? $5, 000. Index = 115 EXERCISE 8-24 (15–20 minutes) (a) 12/31/07 inventory at 1/1/07 prices, $140, 000 ? 1. 12 Inventory 1/1/07 Inventory decrease at base prices Inventory at 1/1/07 prices Less decrease at 1/1/07 prices Inventory 12/31/07 under dollar-value LIFO method (b)

12/31/08 inventory at base prices, $172, 500 ? 1. 15 12/31/07 inventory at base prices Inventory increment at base prices Inventory at 12/31/07 Increment added during 2008 at 12/31/08 prices, $25, 000 X 1. 15 Inventory 12/31/08 $125, 000 160, 000 $ 35, 000 $160, 000 35, 000 $125, 000 $150, 000 125, 000 $ 25, 000 $125, 000 28, 750 $153, 750

EXERCISE 8-25 (20–25 minutes) Change from Prior Year — $+30, 000 (20, 000) +4, 000 +16, 000 +12, 000 Current $ 2004 2005 2006 2007 2008 2009 $ 80, 000 115, 500 108, 000 122, 200 154, 000 176, 900 Price Index 1. 00 1. 05 1. 20 1. 30 1. 40 1. 45 8-32 Base Year $ $ 80, 000 110, 000 90, 000 94, 000 110, 000 122, 000 EXERCISE 8-25 (Continued) Ending Inventory—Dollar-value LIFO: 2004 2005 $80, 000 $80, 000 @ 1. 00 = 30, 000 @ 1. 05 = $ 80, 000 31, 500 $111, 500 2006 $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = $ 80, 000 10, 500 $ 90, 500 2007 $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = 4, 000 @ 1. 30 = $ 80, 000 10, 500 5, 200 $ 95, 700 2009 $80, 000 @ 1. 0 = 10, 000 @ 1. 05 = 4, 000 @ 1. 30 = 16, 000 @ 1. 40 = 12, 000 @ 1. 45 = 2008 $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = 4, 000 @ 1. 30 = 16, 000 @ 1. 40 = $ 80, 000 10, 500 5, 200 22, 400 $118, 100 $ 80, 000 10, 500 5, 200 22, 400 17, 400 $135, 500 EXERCISE 8-26 (15–20 minutes) Change from Date Dec. 31, 2003 Dec. 31, 2004 Dec. 31, 2005 Dec. 31, 2006 Dec. 31, 2007 Current $ $ 70, 000 90, 300 95, 120 105, 600 100, 000 Price Index 1. 00 1. 05 1. 16 1. 20 1. 25 Base-Year $ $70, 000 86, 000 82, 000 88, 000 80, 000 Prior Year — $ +16, 000 (4, 000) +6, 000 (8, 000) 8-33 EXERCISE 8-26 (Continued) Ending Inventory—Dollar-value LIFO: Dec. 31, 2003 $70, 000 Dec. 1, 2004 $70, 000 @ 1. 00 = 16, 000 @ 1. 05 = $70, 000 16, 800 $86, 800 Dec. 31, 2005 $70, 000 @ 1. 00 = 12, 000 @ 1. 05 = $70, 000 12, 600 $82, 600 Dec. 31, 2006

$70, 000 @ 1. 00 = 12, 000 @ 1. 05 = 6, 000 @ 1. 20 = $70, 000 12, 600 7, 200 $89, 800 Dec. 31, 2007 $70, 000 @ 1. 00 = 10, 000 @ 1. 05 = $70, 000 10, 500 $80, 500 8-34 TIME AND PURPOSE OF PROBLEMS Problem 8-1 (Time 30–40 minutes) Purpose—to provide a multipurpose problem with trade discounts, goods in transit, computing internal price indexes, dollar-value LIFO, comparative FIFO, LIFO, and average cost computations, and inventoriable cost identification.

Problem 8-2 (Time 25–35 minutes) Purpose—to provide the student with eight different situations that require analysis to determine their impact on inventory, accounts payable, and net sales. Problem 8-3 (Time 20–25 minutes) Purpose—to provide the student with an opportunity to prepare general journal entries to record purchases on a gross and net basis. Problem 8-4 (Time 40–55 minutes) Purpose—to provide a problem where the student must compute the inventory using a FIFO, LIFO, and average cost assumption.

These inventory value determinations must be made under two differing assumptions: (1) perpetual inventory records are kept in units only and (2) perpetual records are kept in dollars. Many detailed computations must be made in this problem. Problem 8-5 (Time 40–55 minutes) Purpose—to provide a problem where the student must compute the inventory using a FIFO, LIFO, and average cost assumption. These inventory value determinations must be made under two differing assumptions: (1) perpetual inventory records are kept in units only and (2) perpetual records are kept in dollars.

This problem is very similar to Problem 8-4, except that the differences in inventory values must be explained. Problem 8-6 (Time 25–35 minutes) Purpose—to provide a problem where the student must compute cost of goods sold using FIFO, LIFO, and weighted average, under both a periodic and perpetual system. Problem 8-7 (Time 30–40 minutes) Purpose—to provide a problem where the student must identify the accounts that would be affected if LIFO had been used rather than FIFO for purposes of computing inventories. Problem 8-8 (Time 30–40 minutes) Purpose—to provide a problem which covers the use of inventory pools for dollar-value LIFO.

The student is required to compute ending inventory, cost of goods sold, and gross profit using dollar-value LIFO, first with one inventory pool and then with three pools. Problem 8-9 (Time 25–35 minutes) Purpose—the student computes the internal conversion price indexes for a LIFO inventory pool and then computes the inventory amounts using the dollar-value LIFO method. Problem 8-10 (Time 30–35 minutes) Purpose—to provide the student with the opportunity to compute inventories using the dollar-value approach. An index must be developed in this problem to price the new layers.

This problem will prove difficult for the student because the indexes are hidden. Problem 8-11 (Time 40–50 minutes) Purpose—to provide the student with an opportunity to write a memo on how a dollar-value LIFO pool works. In addition, the student must explain the step-by-step procedure used to compute dollar value LIFO. 8-35 SOLUTIONS TO PROBLEMS PROBLEM 8-1 1. $150, 000 – ($150, 000 X . 20) = $120, 000; $120, 000 – ($120, 000 X . 10) = $108, 000, cost of goods purchased $1, 100, 000 + $69, 000 = $1, 169, 000. The $69, 000 of goods in transit on which title had passed on December

24 (f. o. b. hipping point) should be added to 12/31/06 inventory. The $29, 000 of goods shipped (f. o. b. shipping point) on January 3, 2007, should remain part of the 12/31/06 inventory. Because no date was associated with the units issued or sold, the periodic (rather than perpetual) inventory method must be assumed. FIFO inventory cost: 1, 000 units at $24 1, 100 units at 23 Total 1, 500 units at $21 600 units at 22 Total 1, 500 at $21 2, 000 at 22 3, 500 at 23 1, 000 at 24 8, 000 $ 24, 000 25, 300 $ 49, 300 $ 31, 500 13, 200 $ 44, 700 $ 31, 500 44, 000 80, 500 24, 000 $180, 000 2. 3. LIFO inventory cost: Average cost: Totals $180, 000 ? 8, 000 = $22. 0 Ending inventory (2, 100 X $22. 50) is $47, 250. 8-36 PROBLEM 8-1 (Continued) 4. Computation of price indexes: 12/31/06 $252, 000 = 105 $240, 000 $286, 720 = 112 $256, 000 12/31/07 Dollar-value LIFO inventory 12/31/06: Increase $240, 000 – $200, 000 = 12/31/06 price index Increase in terms of 105 Base inventory Dollar-value LIFO inventory $ 40, 000 X 1. 05 42, 000 2006 Layer 200, 000 $242, 000 Dollar-value LIFO inventory 12/31/07: Increase $256, 000 – $240, 000 = 12/31/07 price index Increase in terms of 112 2006 layer Base inventory Dollar-value LIFO inventory 5. $ 16, 000 X 1. 12 17, 920 2007 Layer 42, 000 200, 000 $259, 920

The inventoriable costs for 2007 are: Merchandise purchased Add: Freight-in Deduct: Purchase returns Purchase discounts Inventoriable cost $16, 500 6, 800 $909, 400 22, 000 931, 400 23, 300 $908, 100 8-37 PROBLEM 8-2 James T. Kirk Company Schedule of Adjustments December 31, 2007 Inventory Initial amounts Adjustments: 1. 2. 3. 4. 5. 6. 7. 8. Total adjustments Adjusted amounts 1. $1, 520, 000 NONE 71, 000 30, 000 32, 000 21, 000 27, 000 NONE 3, 000 184, 000 $1, 704, 000 Accounts Payable $1, 200, 000 NONE 71,

000 NONE NONE NONE NONE 56, 000 6, 000 133, 000 $1, 333, 000 Net Sales $8, 150, 000 (40, 000) NONE NONE (47, 000) NONE NONE NONE NONE (87, 000) $8, 063, 000

The $31, 000 of tools on the loading dock were properly included in the physical count. The sale should not be recorded until the goods are picked up by the common carrier. Therefore, no adjustment is made to inventory, but sales must be reduced by the $40, 000 billing price. The $71, 000 of goods in transit from a vendor to James T. Kirk were shipped f. o. b. shipping point on 12/29/07. Title passes to the buyer as soon as goods are delivered to the common carrier when sold f. o. b. shipping point. Therefore, these goods are properly includable in Kirk’s inventory and accounts payable at 12/31/07.

Both inventory and accounts payable must be increased by $71, 000. The work-in-process inventory sent to an outside processor is Kirk’s property and should be included in ending inventory. Since this inventory was not in the plant at the time of the physical count, the inventory column must be increased by $30, 000. 8-38 2. 3. PROBLEM 8-2 (Continued) 4. The tools costing $32, 000 were recorded as sales ($47, 000) in 2007. However, these items were returned by customers on December 31, so 2007 net sales should be reduced by the $47, 000 return.

Also, $32, 000 has to be added to the inventory column since these goods were not included in the physical count. The $21, 000 of Kirk’s tools shipped to a customer f. o. b. destination are still owned by Kirk while in transit because title does not pass on these goods until they are received by the

buyer. Therefore, $21, 000 must be added to the inventory column. No adjustment is necessary in the sales column because the sale was properly recorded in 2008 when the customer received the goods. The goods received from a vendor at 5: 00 p. m. on 12/31/07 should be included in the ending inventory, but were not included in the physical count.

Therefore, $27, 000 must be added to the inventory column. No adjustment is made to accounts payable, since the invoice was included in 12/31/07 accounts payable. The $56, 000 of goods received on 12/26/07 were properly included in the physical count of inventory; $56, 000 must be added to accounts payable since the invoice was not included in the 12/31/07 accounts payable balance. Since one-half of the freight-in cost ($6, 000) pertains to merchandise properly included in inventory as of 12/31/07, $3, 000 should be added to the inventory column. The remaining $3, 000 debit should be reflected in cost of goods sold.

The full $6, 000 must be added to accounts payable since the liability was not recorded. 5. 6. 7. 8. 8-39 PROBLEM 8-3 (a) (1) 8/10 Purchases..... Accounts Payable ..... 8/13 Accounts Payable..... Purchase Returns and Allowances ..... 8/15 Purchases..... Accounts Payable ..... 8/25 Purchases.....

Accounts Payable ..... 8/28 Accounts Payable..... Cash ..... 9, 000 9, 000 1, 200 1, 200 12, 000 12, 000 15, 000 15, 000 12, 000 12, 000 (2) Purchases—addition in cost of goods sold section of income statement. Purchase returns and allowances—deduction from purchases in cost of goods sold section of the income statement. Accounts payable—current liability in the current liabilities section of the balance sheet. 8/10 Purchases.....

Accounts Payable ($9, 000 X . 98) ..... 8/13 Accounts Payable..... Purchase Returns and Allowances ..... ($1, 200 X . 98) 8-40 (b) (1) 8, 820 8, 820 1, 176 1, 176 PROBLEM 8-3 (Continued) 8/15 Purchases ..... Accounts Payable ($12, 000 X . 99)..... 8/25 Purchases ..... Accounts Payable ($15, 000 X . 98)..... 8/28 Accounts Payable.....

Purchase Discounts Lost..... Cash..... 2. 8/31 Purchase Discounts Lost..... Accounts Payable ..... (. 02 X [$9, 000 – $1, 200]) 11, 880 11, 880 14, 700 14, 700 11, 880 120 12, 000 156 156 3. Same as part (a) (2) except: Purchase Discounts Lost—treat as financial expense in income statement. (c) The second method is better theoretically because it results in the inventory

being carried net of purchase discounts, and purchase discounts not taken are shown as an expense.

The first method is normally used, however, for practical reasons. 8-41 PROBLEM 8-4 (a) Purchases Total Units April 1 (balance on hand) April 4 April 11 April 18 April 26 April 30 Total units Total units sold Total units (ending inventory) 100 400 300 200 500 200 1, 700 1, 400 300 Sales Total Units April 5 April 12 April 27 April 28 Total units 300 200 800 100 1, 400 Assuming costs are not computed for each withdrawal: (1) First-in, first-out. Date of Invoice April 30 April 26 No. Units 200 100 Unit Cost $5. 80 5. 60 Total Cost $1, 160 560 $1, 720 (2) Last-in, first-out. Date of Invoice April 1 April 4 No. Units 100 200 Unit Cost $5. 0 5. 10 Total Cost $ 500 1, 020 $1, 520 8-42 PROBLEM 8-4 (Continued) (3) Average cost. Cost of Part X available. Date of Invoice No. Units April 1 April 4 April 11 April 18 April 26 April 30 Total Available 100 400 300 200 500 200 1, 700 Unit Cost $5. 00 5. 10 5. 30 5. 35 5. 60 5. 80 Total Cost $ 500 2, 040 1, 590 1, 070 2, 800 1, 160 $9, 160 Average cost per unit = $9, 160 ? 1, 700 = $5. 39. Inventory, April 30 = 300 X $5. 39 = $1, 617. (b) Assuming costs are computed for each withdrawal: (1) First-in, first out. The inventory would be the same in amount as in part (a), $1, 720. 8-43 PROBLEM 8-4 (Continued) (2) Last-in, first-out.

Purchased Date April 1 April 4 April 5 April 11 300 5. 30 No. of units 100 400 Unit cost $5. 00 5. 10 300 $5. 10 No. of units Sold Unit cost No. of units 100 100 400 100 100 100 100 300 April 12 200 5. 30 100 100 100 April 18 200 5. 35 100 100 100 200 April 26 500 5. 60 100 100 100 200 500 April 27 800 500 @ 200 @ 100 @ April 28 April 30 200 5. 80 100 5. 60 5. 35 5. 30 5. 10 100 100 100 100 200 5. 00 5. 10 5. 00 5. 00 5. 80 1, 010 500 1, 660

Balance* Unit cost $5. 00 5. 00 5. 10 5. 00 5. 10 5. 00 5. 10 5. 30 5. 00 5. 10 5. 30 5. 00 5. 10 5. 30 5. 35 5. 00 5. 10 5. 30 5. 35 5. 60 5, 410 2, 610 1, 540 2, 600 Amount $ 500 2, 540 1, 010

Inventory April 30 is $1, 660. *The balance on hand is listed in detail after each transaction. 8-44 PROBLEM 8-4 (Continued) (3) Average cost. Purchased Date April 1 April 4 April 5 April 11 April 12 April 18 April 26 April 27 April 28 April 30 200 5. 80 200 500 5. 35 5. 60 800 100 5. 4336 5. 4336 300 5. 30 200 5. 2120 No. of units 100 400 Unit cost $5. 00 5. 10 300 $5. 0800 No. of units Sold Unit cost No. of units 100 500 200 500 300 500 1, 000 200 100 300 Balance Unit cost* $5. 0000 5. 0800 5. 0800 5. 2120 5. 2120 5. 2672 5. 4336 5. 4336 5. 4336 5. 6779 Amount $ 500. 00 2, 540. 00 1, 016. 00 2, 606. 00 1, 563. 60 2, 633. 60 5, 433. 0 1, 086. 72 543. 36 1, 703. 36 Inventory April 30 is $1, 703. *Four decimal places are used to minimize rounding errors. 8-45 PROBLEM 8-5 (a) Assuming costs are not computed for each withdrawal (units received, 5, 600, minus units issued, 4, 700, equals ending inventory at 900 units): (1) First-in, first-out. Date of Invoice No. Units Jan. 28 900 Unit Cost $3. 60 Total Cost $3, 240 (2) Last-in, first-out. Date of Invoice No. Units Jan. 2 (3) 900 Unit Cost $3. 00 Total Cost $2, 700 Average cost. Cost of goods available: Date of Invoice No. Units Jan. 2 Jan. 10 Jan. 18 Jan. 23 Jan. 28 Total Available 1, 200 600 1, 000 1, 300 1, 500 5, 600

Unit Cost $3. 00 3. 20 3. 30 3. 40 3. 60 Total Cost $ 3, 600 1, 920 3, 300 4, 420 5, 400 $18, 640 Average cost per unit = $18, 640 ? 5, 600 = $ 3. 33 Cost of inventory Jan. 31 = 900 X $3. 33 = $2, 997 (b) Assuming costs are computed at the time of each withdrawal: Under FIFO—Yes. The amount shown as ending inventory would be the same as in (a) above. In each case

the units on hand would be assumed to be part of those purchased on Jan. 28. Under LIFO—No. During the month the available balance dropped below the ending inventory quantity so that the layers of oldest costs were partially liquidated during the month. 8-46

PROBLEM 8-5 (Continued) Under Average Cost—No. A new average cost would be computed each time a withdrawal was made instead of only once for all items purchased during the year. The calculations to determine the inventory on this basis are given below. (1) First-in, first-out. The inventory would be the same in amount as in part (a), $3, 240. Last-in, first-out. Received Date Jan. 2 Jan. 7 Jan. 10 Jan. 13 Jan. 18 1, 000 3. 30 600 3. 20 500 300 3. 20 3. 30 No. of units 1, 200 Unit cost $3. 00 700 $3. 00 Issued No. of units Unit cost No. of units 1, 200 500 500 600 500 100 500 100 700 Jan. 20 700 100 300 Jan. 23 Jan. 26 Jan. 28 1, 500 3. 0 1, 300 3. 40 800 3. 40 3. 30 3. 20 3. 00 200 200 1, 300 200 500 200 500 1, 500 Jan. 31 1, 300 3. 60 200 500 200 3. 00 3. 00 3. 40 3. 00 3. 40 3. 00 3. 40 3. 60 3. 00 3. 40 3. 60 3, 020 7, 700 600 5, 020 2, 300 Balance Unit cost* $3. 00 3. 00 3. 00 3. 20 3. 00 3. 20 3. 00 3. 20 3. 30 4, 130 Amount $3, 600 1, 500 3, 420 1, 820 (2) Inventory, January 31 is $3, 020. 8-47 PROBLEM 8-5 (Continued) (3) Average cost. Received Date Jan. 2 Jan. 7 Jan. 10 Jan. 13 Jan. 18 Jan. 20 Jan. 23 Jan. 26 Jan. 28 Jan. 31 1, 500 3. 60 1, 300 3. 5291 1, 300 3. 40 800 3. 3773 1, 000 3. 30 600 3. 20 500 300 1, 100 3. 1091 3. 2281 3. 2281 No. of units 1, 200 Unit cost $3. 0 700 $3. 0000 Issued No. of units Unit cost No. of units 1, 200 500 1, 100 600 1, 300 200 1, 500 700 2, 200 900 Balance Unit cost* $3. 0000 3. 0000 3. 1091 3. 1091 3. 2281 3. 2281 3. 3773 3. 3773 3. 5291 3. 5291 Amount $3, 600 1, 500 3, 420 1, 865 4, 197 646 5, 066 2, 364 7, 764 3, 176

Inventory, January 31 is $3, 176. *Four decimal places are used to minimize rounding errors. 8-48 PROBLEM 8-6 (a) Beginning inventory Purchases (2, 000 + 3, 000) Units available for sale Sales (2, 500 + 2, 000) Goods on hand Periodic FIFO 1, 000 X $12 = 2, 000 X $18 = 1, 500 X $23 = 4, 500 1, 000 5, 000 6, 000 4, 500 1, 500 $12, 000 36, 000 34, 500 $82, 500 (b)

Perpetual FIFO Same as periodic: Periodic LIFO 3, 000 X $23 = 1, 500 X $18 = 4, 500 Perpetual LIFO Purchased $82, 500 (c) $69, 000 27, 000 $96, 000 (d) Date 1/1 2/4 2/20 4/2 11/4 Sold Balance 1, 000 X $12 = } $12, 000 $48, 000 2, 000 X $18 = $36, 000 2, 000 X $18 500 X $12 3, 000 X $23 = $69, 000 2, 000 X $23 = $46, 000 _____ $88, 000 1, 000 X $12 2, 000 X $18 } $42, 000 500 X $12 500 X $12 3, 000 X $23 500 X $12 1, 000 X $23 = } } $ 6, 000 $75, 000 $29, 000 8-49 PROBLEM 8-6 (Continued) (e) Periodic weighted-average 1, 000 X $12 = $ 12, 000 2, 000 X $18 = 36, 000 3, 000 X $23 = 69, 000 $117, 000 ? 6, 000 = $19. 50 4, 500 X $19. 50 $87, 750 (f) Perpetual moving average

Date 1/1 2/4 2/20 4/2 11/4 3, 000 X $23 = $69, 000 2, 000 X $22 = 44, 000 $84, 000 a Purchased Sold Balance 1, 000 X $12 = $12, 000 2, 000 X $18 = $36, 000 2, 500 X $16 = $40, 000 3, 000 X $16 = 500 X $16 = 3, 500 X $22 = 1, 500 X $22 = a 48, 000 8, 000 77, 000 33, 000 500 X $16 = $ 8, 000 3, 000 X $23 = 69, 000 3, 500 $77, 000 ($77, 000 ? 3, 500 = $22) 8-50 PROBLEM 8-7 The accounts in the 2008 financial statements which would be affected by a change to LIFO and the new amount for each of the accounts are as follows: Account Cash Inventory Retained earnings Cost of goods sold Income taxes New amount for 2008 $165, 600 120, 000 215, 600 810, 000 94, 400 1) (2) (3) (4) (5) The calculations for both 2007 and 2008 to support

the conversion to LIFO are presented below. Income for the Years Ended Sales Less: Cost of goods sold Other expenses Income before taxes Income taxes (40%) Net income Cost of Good Sold and Ending Inventory for the Years Ended Beginning inventory Purchases Cost of goods available Ending inventory Cost of goods sold Determination of Cash at Income taxes under FIFO Income taxes as calculated under LIFO Increase in cash Adjust cash at 12/31/08 for 2007 tax difference Total increase in cash Cash balance under FIFO Cash balance under LIFO 40, 000 X $3. 00) (150, 000 X $3. 50) (40, 000 X $3. 00) 12/31/07 $900, 000 525, 000 205, 000 730, 000 170, 000 68, 000 $102, 000 12/31/08 $1, 350, 000 810, 000 304, 000 1, 114, 000 236, 000 94, 400 $ 141, 600 12/31/07 $120, 000 525, 000 645, 000 120, 000 $525, 000 12/31/07 $ 76, 000 68, 000 8, 000 — 8, 000 130, 000 $138, 000 8-51 (40, 000 X $3. 00) (180, 000 X $4. 50) (40, 000 X $3. 00) 12/31/08 $120, 000 810, 000 930, 000 120, 000 $810, 000 12/31/08 $110, 400 94, 400 16, 000 8, 000 24, 000 141, 600 $165, 600 PROBLEM 8-7 (Continued)

Determination of Retained Earnings at Net income under FIFO Net income under LIFO Reduction in retained earnings Adjust retained earnings at 12/31/08 for 2007 reduction Total reduction in retained earnings Retained earnings under FIFO Retained earnings under LIFO 12/31/07 $114, 000 102, 000 12, 000 — 12, 000 200, 000 $188, 000 12/31/08 $165, 600 141, 600 24, 000 12, 000 36, 000 251, 600 $215, 600 8-52 PROBLEM 8-8 (a) 1. Ending inventory in units Portable 6, 000 + 15, 000 – 14, 000 = Midsize 8, 000 + 20, 000 – 24, 000 = Flat-screen 3, 000 + 10, 000 – 6, 000 = 7, 000 4, 000 7, 000 18, 000 2. Ending inventory at current cost Portable 7, 000 X $120 = Midsize 4, 000 X $300 Flat-screen 7, 000 X $460 = $ 840, 000 1, 200, 000 3, 220,

000 $5, 260, 000 3. Ending inventory at base-year cost Portable 7, 000 X $100 = Midsize 4, 000 X $250 = Flat-screen 7, 000 X $400 = $ 700, 000 1, 000, 000 2, 800, 000 $4, 500, 000 4. Price index $5, 260, 000 ? $4, 500, 000 = 1. 1689 Ending inventory $3, 800, 000 X 1. 0000 = 700, 000* X 1. 1689 = *($4, 500, 000 – $3, 800, 000 = $700, 000) 5. $3, 800, 000 818, 230 $4, 618, 230 6. Cost of goods sold Beginning inventory Purchases [(15, 000 X $120) + (20, 000 X $300) + (10, 000 X $460)] Cost of goods available Ending inventory Cost of goods sold 8-53 $ 3, 800, 000 2, 400, 000 16, 200, 000 4, 618, 230 $11, 581, 770 PROBLEM 8-8 (Continued) 7. Gross profit Sales [(14, 000 X $150) + (24, 000 X $405) + (6, 000 X $600)] Cost of goods sold Gross profit $15, 420, 000 11, 581, 770 $ 3, 838, 230 (b) 1. Ending inventory at current cost restated to base cost Portable $ 840, 000 ? 1. 20 = $ 700, 000 Midsize 1, 200, 000 ? 1. 20 = $1, 000, 000 Flat-screen 3, 220, 000 ? 1. 15 = $2, 800, 000 Ending inventory Portable $ 600, 000 X 1. 00 = 100, 000 X 1. 20 = Midsize 1, 000, 000 X 1. 00 = Flat-screen 1, 200, 000 X 1. 00 = 1, 600, 000 X 1. 15 = 2. $ 600, 000 120, 000 1, 000, 000 1, 200, 000 1, 840, 000 $4, 760, 000 3.

Cost of good sold Cost of good available Ending inventory Cost of goods sold Gross profit Sales Cost of goods sold Gross profit $16, 200, 000 4, 760, 000 $11, 440, 000 4. $15, 420, 000 11, 440, 000 $ 3, 980, 000 8-54 PROBLEM 8-9 (a) Adis Abeba Wholesalers Inc. Computation of Internal Conversion Price Index for Inventory Pool No. 1 Double Extension Method 2006 $595, 000 234, 000 $829, 000 2007 $520, 000 320, 000 $840, 000 Current inventory at current-year cost Product A Product B Current inventory at base cost Product A Product B 17, 000 X $35 = 9, 000 X $26 = 13, 000 X $40 = 10, 000 X $32

= 17, 000 X $30 = 9, 000 X $25 = 510, 000 225, 000 $735, 000 13, 000 X $30 = 10, 000 X $25 = $390, 000 250, 000 $640, 000 Conversion price index $829, 000 ? $735, 000 = 1. 13 $840, 000 ? $640, 000 = 1. 31 (b) Adis Abeba Wholesalers Inc. Computation of Inventory Amounts under Dollar-Value LIFO Method for Inventory Pool No. 1 at December 31, 2006 and 2007 Current Inventory at base cost Conversion price index 1. 00 1. 13 (a) Inventory at LIFO cost $525, 000 237, 300 $762, 300 December 31, 2006 Base inventory 2006 layer ($735, 000 – $525, 000) Total December 31, 2007 Base inventory 2006 layer (remaining) Total (a) (b) $525, 000 210, 000 $735, 000 (a) $525, 000 115, 000 $640, 000 b) (a) 1. 00 1. 13 (a) $525, 000 129, 950 $654, 950 Per schedule for instruction (a). After liquidation of $95, 000 base cost ($735, 000 – $640, 000). 8-55 PROBLEM 8-10 Base-Year Cost December 31, 2005 January 1, 2005, base December 31, 2005, layer $45, 000 11, 000 $56, 000 Index % 100 115* Dollar-Value LIFO $45, 000 12, 650 $57, 650 December 31, 2006 January 1, 2005, base December 31, 2005, layer December 31, 2006, layer $45, 000 11, 000 12, 400 $68, 400 100 115 128** $45, 000 12, 650 15, 872 $73, 522 December 31, 2007 January 1, 2005, base December 31, 2005, layer December 31, 2006, layer December 31, 2007, layer 45, 000 11, 000 12, 400 1, 600 $70, 000 100 115 128 130*** $45, 000 12, 650 15, 872 2, 080 $75, 602 *$64, 500 ? $56, 000 **$87, 300 ? $68, 400 ***$90, 800 ? $70, 000 8-56 PROBLEM 8-11 (a) Schedule A A Current $ 2003 2004 2005 2006 2007 2008 $ 80, 000 115, 500 108, 000 131, 300 154, 000 174, 000 B Price Index 1. 00 1. 05 1. 20 1. 30 1. 40 1. 45 C Base-Year $ $ 80, 000 110, 000 90, 000 101, 000 110, 000 120, 000 D Change from Prior Year — $+30, 000 (20, 000) +11, 000 +9, 000 +10, 000 Schedule B Ending Inventory-Dollar-Value LIFO: 2003 2004 $ 80, 000 $ 80, 000 31, 500 $111, 500 $ 80,

000 10, 500 $ 90, 500 $ 80, 000 10, 500 14, 300 $104, 800 8-57 80, 000 @ $1. 00 = 30, 000 @ 1. 05 = $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = 2007 $80, 000 @ $1. 00 = 10, 000 @ 1. 05 = 11, 000 @ 1. 30 = 9, 000 @ 1. 40 = 2008 $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = 11, 000 @ 1. 30 = 9, 000 @ 1. 40 = 10, 000 @ 1. 45 = $ 80, 000 10, 500 14, 300 12, 600 $117, 400 $ 80, 000 10, 500 14, 300 12, 600 14, 500 $131, 900 2005 2006 $80, 000 @ 1. 00 = 10, 000 @ 1. 05 = 11, 000