# Exercises—Series B

## Exercise 1-1B Financial versus managerial accounting items [(LO 1-1)](#_top)

Required:

Indicate whether each of the following items is representative of financial or managerial accounting.

|  |  |  |
| --- | --- | --- |
| **Item** | **Managerial Accounting** | **Financial Accounting** |
| 1. Financial results used by stockbrokers to evaluate a company’s profitability. |  | x |
| 1. Quarterly budgets used by management to determine future borrowing needs. | x |  |
| 1. Financial statements prepared in accordance with generally accepted accounting principles. |  | x |
| 1. Annual financial reports submitted to the SEC in compliance with federal securities laws. |  | x |
| 1. Projected budget information used to make logistical decisions. | x |  |
| 1. Condensed financial information sent to current investors at the end of each quarter. |  | x |
| 1. Audited financial statements submitted to bankers when applying for a line of credit. |  | x |
| 1. A weekly cash budget used by the treasurer to determine whether cash on hand is excessive. | x |  |
| 1. Monthly sales reports used by the vice president of marketing to help allocate funds. | x |  |
| 1. Divisional profit reports used by the company president to determine bonuses for divisional vice presidents. | x |  |

#### 

## Exercise 1-2B Identifying product versus selling, general, and administrative costs [(LO 1-2)](#_top)

Required:

Indicate whether each of the following costs should be classified as a product cost or as a general, selling, and administrative cost in accordance with Generally Accepted Accounting Principles.

|  |  |  |
| --- | --- | --- |
| **Item** | **Product Cost** | **SG&A Cost** |
| 1. Wages paid to workers in a manufacturing plant. | x |  |
| 1. The salary of the receptionist working in the sales department. |  | x |
| 1. Supplies used in the sales department. |  | x |
| 1. Wages of janitors who clean the factory floor. | x |  |
| 1. The salary of the company president. |  | x |
| 1. The salary of the cell phone manufacturing plant manager. | x |  |
| 1. The depreciation on administrative buildings. |  | x |
| 1. The depreciation on the company treasurer’s computer. |  | x |
| 1. The fabric used in making a customized sofa for a customer. | x |  |
| 1. The salary of an engineer who maintains all manufacturing plant equipment. | x |  |

## 

## Exercise 1-3B Classifying costs: product or SG&A cost; asset or expense [(LO 1-2)](#_top)

Required:

Use the following table to classify each cost as a product cost or a selling, general, and administrative (SG&A) cost. Also indicate whether the cost would be recorded as an asset or an expense. Assume that product costs are defined in accordance with Generally Accepted Accounting Principles. The first cost item is shown as an example.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **Cost Category** | **Product or SG&A** | **Asset or Expense** | | **Cost of merchandise shipped to customers** | Product | **Expense** | | **Depreciation on vehicles used by salespeople** | SG&A | **Expense** | | Wages of administrative building security guards | SG&A | **Expense** | | **Supplies used in the plant manager's office** | Product | Asset | | **Purchase of computers for the accounting department** | SG&A | Asset | | **Depreciation on computers used in factory** | Product | Asset | | **Natural gas used in the factory** | Product | Asset | | **Cost of television commercials** | SG&A | **Expense** | | **Wages of factory workers** | Product | Asset | | **Paper and ink cartridges used in the cashier's office** | SG&A | Expense | | **Raw material used to make products** | Product | Asset | | **Lubricant used to maintain factory equipment** | Product | Asset | | **Cost of a delivery truck** | SG&A | Asset | | **Cash dividend to stockholders** | Neither | Neither | |  |  |

## Exercise 1-4B Effect of product versus selling, general, and administrative costs on financial statements [(LO 1-4)](#_top)

Required:

Ocean Plastics Company accrued a tax liability for $7,000. Use the following horizontal financial statements model to show the effect of this accrual under the following two assumptions: (1) the tax is on administrative buildings, or (2) the tax is on production equipment. Use plus signs and/or minus signs to show the effect on each element. If an element is not affected, indicate so by placing the letters NA under the appropriate heading. Assume the financial statements are prepared in accordance with Generally Accepted Accounting Principles.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Assets** | **=** | **Liab.** | **+** | **Equity** |  | **Rev.** | **–** | **Exp.** | **=** | **Net Inc.** |  |
| **1.** |  |  |  | **+$7,000** |  | **–$7,000** |  |  |  | **+$7,000** |  | **–$7,000** |  |
| **2.** |  | **+$7,000** |  | **+$7,000** |  |  |  |  |  |  |  |  |  |

## 

## Exercise 1-5B Effect of product versus selling, general, and administrative cost on financial statements [(LO 1-3)](#_top)

Required:

Gilchrist Corporation recognized the annual expiration of insurance on December 31, 2018. Using the following horizontal financial statements model, indicate how this event affected the company’s GAAP based financial statements under the following two assumptions: (1) the insurance was for office equipment, or (2) the insurance was for manufacturing equipment. Indicate whether the event increases (I), decreases (D), or does not affect (NA) each element of the financial statements.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | ***Assets*** | | | | | | | = | ***Equity*** | | |  | Income Statement | | | | |  |
| Event |  |  |  | ***Prepaid*** | | |  |  |  | ***Com.*** |  | ***Ret.*** |  |  |  |  |  |  |  |
| No. |  | ***Cash*** | + | ***Insurance*** | | | **+** | ***Inventory*** | = | ***Stk.*** | + | ***Ear.*** |  | Rev. | – | Exp. | = | Net Inc. |  |
| 1. |  | NA |  |  | D |  |  | NA |  | NA |  | D |  | NA |  | I |  | D |  |
| 2. |  | NA |  |  | D |  |  | I |  | NA |  | NA |  | NA |  | NA |  | NA |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Exercise 1-6B Product versus selling, general, and administrative costs [(LO 1-3)](#_top)

In reviewing Larson Company’s September accounting records, Andy Miranda, the chief accountant, noted the following depreciation costs. Assume product costs are defined by Generally Accepted Accounting Principles.

1. Factory buildings—$75,000.
2. Computers used in manufacturing—$12,000.
3. A building used to display finished products—$24,000.
4. Trucks used to deliver merchandise to customers—$18,000.
5. Forklifts used in the factory—$30,000.
6. Furniture used in the president’s office—$15,000.
7. Elevators in administrative buildings—$20,000.
8. Factory machinery—$36,000.

**Required:**

1. What amount of depreciation cost would be classified as selling, general, and administrative expense?

Depreciation costs that would be classified as selling, general, and administrative expense are the following:

|  |  |  |
| --- | --- | --- |
| 1. | Depreciation of a building for finished product display | $24,000 |
| 2. | Depreciation of delivery trucks | 18,000 |
| 3. | Depreciation of furniture used in the president's office | 15,000 |
| 4. | Depreciation of elevators in administrative buildings | 20,000 |
|  | Total | $77,000 |

1. Assume that Larson manufactured 3,000 units of product and sold 2,000 units of product during the month of September. Determine the amount of depreciation cost that would be included in cost of goods sold.

Depreciation costs that would be classified as product costs are the following:

|  |  |  |
| --- | --- | --- |
| 1. | Depreciation of factory buildings | $ 75,000 |
| 2. | Depreciation of computers used in manufacturing | 12,000 |
| 3. | Depreciation of forklifts used in the factory | 30,000 |
| 4. | Depreciation of factory machinery | 36,000 |
|  | Total | $ 153,000 |

**Since 2,000 units of 3,000 products finished were sold, 2/3 (2,000 ÷ 3,000) of the product cost would be included in cost of goods sold. Therefore, the total depreciation cost that would be included in cost of goods sold is $153,000 x 2/3 = $102,000.**

## Exercise 1-7B Recording product versus selling, general, and administrative costs in a financial statements model [(LO 1-3)](#_top)

Mueller Electronics Company experienced the following events during its first accounting period.

1. Received $87,000 cash by issuing common stock.
2. Paid $30,000 cash for wages to production workers.
3. Paid $15,000 for salaries to administrative staff.
4. Purchased for cash and used $16,000 of raw materials.
5. Recognized $1,000 of depreciation on administrative offices.
6. Recognized $1,500 of depreciation on manufacturing equipment.
7. Recognized $48,000 of sales revenue from cash sales of products.
8. Recognized $30,000 of cost of goods sold from the sale referenced in Event 7.

**Required:**

Use a horizontal financial statements model to show how each event affects the balance sheet and income statement. Assume the financial statements are prepared in accordance with Generally Accepted Accounting Principles. Indicate whether the event increases (I), decreases (D), or does not affect (NA) each element of the financial statements. The first transaction is shown as an example. (Note: Show accumulated depreciation as a decrease in the book value of the appropriate asset account.)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | *Assets* | | | | | | | = | *Equity* | | |  | Income Statement | | | | |  |
| Event |  |  |  |  |  | *Manuf.* |  | *Adm.* |  | *Com.* |  | *Ret.* |  |  |  |  |  |  |  |
| No. |  | *Cash* | + | *Inventory* | + | *Equip.* | + | *Offices* | = | *Stk.* | + | *Ear.* |  | Rev. | – | Exp. | = | Net Inc. |  |
| 1. |  | I | + | NA | + | NA | + | NA | = | I | + | NA |  | NA | – | NA | = | NA |  |
| 2. |  | D | + | I | + | NA | + | NA | = | NA | + | NA |  | NA | – | NA | = | NA |  |
| 3. |  | D | + | NA | + | NA | + | NA | = | NA | + | D |  | NA | – | I | = | D |  |
| 4. |  | D | + | I | + | NA | + | NA | = | NA | + | NA |  | NA | – | NA | = | NA |  |
| 5. |  | NA | + | NA | + | NA | + | D | = | NA | + | D |  | NA | – | I | = | D |  |
| 6. |  | NA | + | I | + | D | + | NA | = | NA | + | NA |  | NA | – | NA | = | NA |  |
| 7. |  | I | + | NA | + | NA | + | NA | = | NA | + | I |  | I | – | NA | = | I |  |
| 8. |  | NA | + | D | + | NA | + | NA | = | NA | + | D |  | NA | – | I | = | D |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Exercise 1-8B Allocating product costs between ending inventory and cost of goods sold [(LO 1-3)](#_top)

Fuji Manufacturing Company began operations on January 1. During January, it started and completed 6,000 units of product. Assume all financial statement data are prepared in accordance with Generally Accepted Accounting Principles.  The company incurred the following costs:

1. Raw materials purchased and used—$8,100.
2. Wages of production workers—$6,500.
3. Salaries of administrative and sales personnel—$3,200.
4. Depreciation on manufacturing equipment—$3,400.
5. Depreciation on administrative equipment—$3,000.

Fuji sold 4,800 units of product.

**Required:**

1. Determine the total product cost.

|  |  |
| --- | --- |
| Raw materials purchased and used | $ 8,100 |
| Wages of production workers | 6,500 |
| Depreciation on manufacturing equipment | 3,400 |
| Total product cost | $18,000 |

1. Determine the total cost of the ending inventory.

**Cost of inventory per unit = $18,000 ÷ 6,000 = $3**

**Ending inventory in units = 6,000 – 4,800 = 1,200**

**Cost of ending inventory = $3 x 1,200 = $3,600**

1. Determine the total of cost of goods sold.

**Cost of goods sold = $3 x 4,800 = $14,400**

## Exercise 1-9B Identify upstream, midstream, and downstream costs [(LO 1-4)](#_top)

**Required:**

Identify each of the items shown in the left column of the following table as being an upstream, a midstream, or a downstream cost by placing an "X" in the one of the columns to the right of the items column.  The first item is shown as an example.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Upstream** | **Midstream** | **Downstream** |
| **Telephone cost of a manufacturing plant** |  | **X** |  |
| **Steering wheel use to assemble a car** |  | **X** |  |
| **Wages of a manufacturing plant** |  | **X** |  |
| **Cost of converting a concept car to a mass production plan** | **X** |  |  |
| **Cost of product warranty** |  |  | **X** |
| **Cost of researching a cancer treatment drug** | **X** |  |  |
| **Plant manager’s salary** |  | **X** |  |
| **Sales commissions** |  |  | **X** |
| **Cost of pursuing FDA’s approval on a new drug** | **X** |  |  |
| **Cost of product advertisement** |  |  | **X** |
| **Cost of providing Internet service in a plant** |  | **X** |  |
| **Year-end bonus paid to factory foremen** |  | **X** |  |
| **Shipping manager’s salary** |  |  | **X** |
| **Cost of research and development** | **X** |  |  |
| **Depreciation on vehicles used by salespersons** |  |  | **X** |
| **Depreciation on vehicles used in a plant** |  | **X** |  |

## Exercise 1-10B Upstream and downstream costs [(LO 1-4)](#_top)

During 2017, Hutton Pharmaceutical Company incurred $35,000,000 of research and development (R&D) costs to develop a new hay fever drug called Allergone. In accordance with FASB standards, the entire R&D cost was recognized as expense in 2017. Manufacturing costs (direct materials, direct labor, and overhead) to produce Allergone are expected to be $20 per unit. Packaging, shipping, and sales commissions are expected to be $3 per unit. Hutton expects to sell 5,000,000 units of Allergone before developing a new drug to replace it in the market. During 2017, Hutton produced 800,000 units of Allergone and sold 600,000 of them.  Assume all financial statement data are prepared in accordance with Generally Accepted Accounting Principles.

**Required:**

1. Identify the upstream and downstream costs.

**The $35,000,000 of research and development costs is an upstream cost. Packaging, shipping, and sales commissions are downstream costs.**

1. Determine the 2017 amount of cost of goods sold and the December 31, 2017, ending inventory balance.

**Cost of goods sold: $20 x 600,000 = $12,000,000**

**Ending inventory: $20 x 200,000 = $4,000,000**

1. Determine the unit sales price Hutton should establish assuming it desires to earn a profit margin equal to 40 percent of the *total cost* of developing, manufacturing, and distributing Allergone.

|  |  |
| --- | --- |
| Upstream cost per unit, $35,000,000 ÷ 5,000,000 | $ 7 |
| Manufacturing cost per unit | 20 |
| Downstream costs per unit | 3 |
| Total cost | 30 |
| Plus: 40% profit margin, $30 x 40% | 12 |
| Price | $42 |

1. Prepare an income statement for 2017 using the sales price from *Requirement c*.

|  |  |
| --- | --- |
| **Income Statement** | |
| **Sales revenue ($42 X 600,000)** | **$ 25,200,000** |
| **Cost of goods sold ($20 X 600,000)** | **(12,000,000)** |
| **Gross margin** | **13,200,000** |
| **Research and development expense** | **(35,000,000)** |
| **Selling expenses ($3 x 600,000)** | **(1,800,000)** |
| **Net income (Loss)** | **($23,600,000)** |
|  |  |

1. Given that the price was properly established using total costs (upstream, midstream and downstream costs), why does the GAAP based income statement prepared in *Requirement d* show a loss?

**GAAP requires expensing research and development costs in the period in which they are incurred. However, Hutton expects the R&D costs to result in overall Allergone sales of 5,000,000 units in 2017 and future years. The income statement for 2017 recognizes revenue from selling 600,000 units while recognizing the entire R&D cost as expense. No R&D cost will be recognized on future income statements. The 2017 net loss will be more than offset by positive net incomes from future Allergone sales.**

## 

## Exercise 1-11B Product costs in a manufacturing company [(LO 1-4)](#_top)

Because friends and neighbors frequently praise her baking skills, Susan Nazari plans to start a new business baking cakes for customers. She wonders how to determine the cost of her cakes. Assume financial statement data are prepared in accordance with Generally Accepted Accounting Principles.

**Required:**

1. Identify and give examples of the three components of product cost incurred in producing cakes.

**The three components of product cost incurred in producing cakes are direct materials such as flour, sugar, and eggs; direct labor such as Susan’s effort to mix ingredients together and bake them into cakes; and manufacturing overhead such as the cost of an oven, electric power cost, and the cost of detergent to wash pans.**

1. Explain why measuring product cost for a bakery is more complex than measuring product cost for a retail store.

Measuring product cost for a merchandising company, such as a retail store, is relatively easy. It includes the vendor’s invoice price, freight cost, and other costs necessary to get the inventory ready to sell. Measuring product cost for a manufacturing entity requires a more complex system. A manufacturing enterprise must classify its costs as product costs or period costs. It must accumulate product costs (direct materials, direct labor, and manufacturing overhead). It must then classify the cost of sold products as expense and unsold products as inventory, an asset.

1. Assume that Susan decides to bake cakes for her customers at her home. Consequently, she will avoid the cost of renting a bakery. However, her home utility bills will increase. She also plans to offer different types of cakes for which baking time will vary. Cakes mixed with ice cream will require freezing, and other cakes will need refrigeration. Some can cool at room temperature. Under these circumstances, how can Susan estimate the amount of utility cost required to produce a given cake? Identify two costs other than utility cost that she will incur that could be difficult to measure.

If Susan produced only one type of cake, she could possibly use the number of cakes baked per month to allocate an equal portion of her utility cost increase to each cake. Since Susan’s cakes are custom-made for individual customers, however, they vary in size, shape, and ingredients. They bake for different lengths of time at different temperatures. Further, their refrigeration requirements differ. There is no cost-effective way to measure the amount of electricity used by individual cakes. Consequently, utility cost must be treated as a manufacturing overhead cost.

**The cost of an oven is a component of product cost which is difficult to measure. The useful life is uncertain, as is the number of cakes Susan may bake over its lifetime. It is impossible to trace the amount of oven depreciation to the cost of an individual cake. Other difficult-to-measure costs include the costs of detergent, water, heating, and air conditioning to provide a pleasant kitchen in which Susan can work. These costs cannot easily be traced to individual cakes.**

## Exercise 1-12B Financial statement effects for manufacturing versus service organizations [(LO 1-4)](#_top)

The following horizontal financial statements model shows the effects of recording the expiration of insurance in two different circumstances. Assume all financial statement data are prepared in accordance with Generally Accepted Accounting Principles. One circumstance represents the expiration of insurance on a factory building. The other circumstance represents the expiration of insurance on an administrative building. The effects of each event have been recorded using the letters (I) for increase, (D) for decrease, and (NA) for no effect.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | ***Assets*** | | | | | | | = | ***Equity*** | | |  | Income Statement | | | | |  |
| Event |  |  |  | ***Prepaid*** | | |  |  |  | ***Com.*** |  | ***Ret.*** |  |  |  |  |  |  |  |
| No. |  | ***Cash*** | + | ***Insurance*** | | | **+** | ***Inventory*** | = | ***Stk.*** | + | ***Ear.*** |  | Rev. | – | Exp. | = | Net Inc. |  |
| 1. |  | NA |  |  | D |  |  | I |  | NA |  | NA |  | NA |  | NA |  | NA |  |
| 2. |  | NA |  |  | D |  |  | NA |  | NA |  | D |  | NA |  | I |  | D |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Required:**

1. Identify the event that represents the expiration of insurance on the factory building.

Event No. 1 represents the expiration of insurance on a factory building because the recognition decreases prepaid insurance and increases inventory, both assets on the balance sheet. The expiration of insurance on a factory building does not affect the income statement until the products made in the factory are sold.

1. Explain why recognizing the expiration of insurance on a factory building affects financial statements differently than recognizing the expiration of insurance on an administrative building.

**The cost of insuring a factory is among the costs necessary to produce inventory. The expiration of factory insurance, therefore, is an asset exchange: the asset prepaid insurance is exchanged for the asset inventory, affecting only the balance sheet. The expiration of insurance on an administrative building, however, is an asset use transaction which increases expense on the income statement. No asset that will benefit future periods is produced in the administrative building.**

## Exercise 1-13B Effect of a just-in-time inventory system on financial statements [(LO 1-5)](#_top)

In reviewing Fargo Company’s financial statements for the past two years, Lilian Stone, a bank loan officer, noticed that the company’s inventory level had increased significantly while sales revenue had remained constant. Such a trend typically indicates increasing inventory carrying costs and slowing cash inflows. Ms. Stone concluded that the bank should deny Fargo’s credit line application.

**Required:**

Explain how implementing an effective just-in-time inventory system would affect Baxter’s financial statements and possibly reverse Ms. Stone’s decision about its credit line application.

**Increases in inventory without corresponding increases in sales revenue often signal increasing working capital costs and a decreasing rate of cash inflows. More cash has been invested in inventory, but the inventory has not been sold and therefore converted back into cash. With a just-in-time inventory management system (JIT system), Fargo would only acquire inventory when it is needed for sale, eliminating its costly investment in idle inventory and speeding up its cash flow.**

## 

## Exercise 1-14B Using JIT to minimize waste and lost opportunity [(LO 1-5)](#_top)

Denise Jensen is the editor-in-chief of her school’s yearbook. The school has 1,200 students and 40 faculty and staff members. The firm engaged to print copies of the yearbook charges the school $20 per book and requires a 10-day lead time for delivery. Denise and her editors plan to order 1,000 copies to sell at the school fair for $30 each.

**Required:**

1. If the school sells 900 yearbooks, what amount of profit will it earn? What is the cost of waste due to excess inventory?

|  |  |
| --- | --- |
| **Income Statement** | |
| **Sales revenue ($30 x 900)** | **$27,000** |
| **Cost of goods sold ($20 x 900)** | **(18,000)** |
| **Gross margin** | **9,000** |
| **Waste due to excess inventory ($20 x 100)** | **(2,000)** |
| **Net income** | **$ 7,000** |
|  |  |

1. If 100 buyers are turned away after all yearbooks have been sold, what amount of profit will the school earn? What amount of opportunity cost will the school incur?

|  |  |
| --- | --- |
| **Income Statement** | |
| **Sales revenue ($30 x 1,000)** | **$30,000** |
| **Cost of goods sold ($20 x 1,000)** | **(20,000)** |
| **Net income** | **$10,000** |
|  |  |

**The opportunity cost of lost sales: ($30 – $20) x 100 = $1,000**

1. How could Denise use a JIT inventory system to maximize profits by eliminating waste and opportunity cost?

If Denise could arrange to order only the number of yearbooks actually needed, the school could eliminate potential losses from either the waste attributable to unsold yearbooks or the opportunity cost of lost sales from having too few yearbooks available. For example, the yearbook staff could request that students, faculty members, and staff members who want to purchase yearbooks complete order forms 10 days in advance of the school fair day. On that day, the yearbook staff could set up a yearbook stand to receive customer payments and deliver yearbooks at the same time.

## 

## Exercise 1-15B Using JIT to minimize holding costs [(LO 1-5)](#_top)

Melinda’s Beauty Salon purchases inventory supplies from a variety of vendors, some of which require a four-week lead time before delivering inventory purchases. To ensure that she will not run out of supplies, Melinda Lowe, the owner, maintains a large inventory. The average cost of inventory on hand is $12,000. Ms. Lowe usually finances inventory purchases with a line of credit that has a 9 percent annual interest charge. Her accountant has suggested that she purchase all inventory from a single large distributor that can satisfy all of her orders within a three-day period. With such prompt delivery, Ms. Lowe would be able to reduce her average inventory balance to $2,000. She also believes that she could save $5,000 per year through reduced phone bills, insurance costs, and warehouse rental costs associated with ordering and maintaining the higher level of inventory.

**Required:**

1. Is the inventory system the accountant suggested to Ms. Lowe a pure or approximate just-in-time system?

The new inventory system is an approximate just-in-time system since it does not eliminate all inventory.

1. Based on the information provided, how much inventory holding cost could Ms. Lowe eliminate by taking the accountant’s advice?

Reduced cost of inventory: $12,000 – $2,000 = $10,000

Finance cost: $10,000 x 9% = $900

Total eliminated inventory holding cost: $5,000 + $900 = $5,900

#### 

## Exercise 1-16B The fraud triangle [(LO 1-6)](#_top)

The accounting records of Abbott Manufacturing Company (AMC) revealed that the company incurred $3 million of materials, $5 million of production labor, $4 million of manufacturing overhead, and $6 million of selling, general, and administrative expense during 2017. It was discovered that AMC’s chief financial officer (CFO) included $1.5 million dollars of upstream research and development expense in the manufacturing overhead account when it should have been classified as selling, general, and administrative expense. AMC made 5,000 units of product and sold 4,000 units of product in 2017.

**Required:**

1. Indicate whether the elements on the 2017 financial statements (i.e., assets, liabilities, equity, revenue, expense, and net income) would be overstated or understated as a result of the misclassification of the upstream research and development expense. Determine the amount of the overstatement or understatement for each element.

**While the entire $1,500,000 of upstream research and development cost should have been expensed immediately, the CFO put the $1,500,000 into an inventory account. Since some of the inventory was not sold, some of the R&D cost is still in the inventory account. The computations are shown below:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of units in ending inventory: | | | | | | | | |
| Inventory Completed |  | 5,000 | |  | | | |  | |
| Less Inventory Sold |  | | (4,000) | |  |  |
| Ending Inventory |  | 1,000 | |  | | | |  | |
| **The portion of R&D cost still in ending inventory is $300,000 ($300 x 1,000 units).** | | | | | | | | | | | |

**Instead of being in the inventory account, the $300,000 should have been expensed. As a result, assets, retained earnings (equity), and net income are overstated by $300,000. Expenses are understated by the same amount. Revenue and liabilities are not affected.**

1. Speculate as to what would cause the CFO to intentionally misclassify the research and development expense. (*Hint:* Review the chapter material regarding the fraud triangle.)

**The CFO’s motive was probably that he was under pressure to present an inflated amount of net income. Executive compensation is frequently tied to net income or stock price which is related by net income. Further, a strong balance sheet and income statement make borrowing money or selling stock easier, because the company appears more attractive to a potential lender or investor.**

## Exercise 1-17B Applications of the Sarbanes-Oxley Act [(LO 1-6)](#_top)

Greg Madrid, a HealthSouth billing clerk, filed a suit under the False Claims Act charging that HealthSouth purchased computer equipment from a company owned by Richard Scrushy’s parents at prices two and three times the normal price. At the time, Richard Scrushy was the CEO of HealthSouth. The overcharges inflated HealthSouth’s expense ratios that the government used when calculating a Medicare reimbursement rate. As a result, the government was overcharged for services provided by HealthSouth. While refusing to recognize any wrongdoing, HealthSouth agreed to pay an $8 million settlement related to the lawsuit brought by the whistleblower.

**Required:**

Explain how the provisions of Sarbanes-Oxley would provide protection to a whistleblower such as Greg Madrid.

**Had the Sarbanes-Oxley Act been in effect, HealthSouth would have been required to establish a hotline and other mechanisms for the anonymous reporting of fraudulent activities. The company also would have been prohibited from applying any form of punishment to whistleblowers such as Greg Madrid.**

## Exercise 1-18B Value chain analysis [(LO 1-7)](#_top)

Fastidious Vincent washed his hair at home and then went to a barbershop for a haircut. The barber explained that shop policy is to shampoo each customer’s hair before cutting, regardless of how recently it had been washed. Somewhat annoyed, Vincent submitted to the shampoo, after which the barber cut his hair with great skill. After the haircut, the barber dried his hair and complimented Vincent on his appearance. He added, “That will be $18; $3 for the shampoo and $15 for the cut and dry.” Vincent did not tip the barber.

**Required:**

Identify the nonvalue-added activity described. How could the barber modify this nonvalue-added activity?

The process of shampooing a customer's hair before cutting is nonvalue-added if the customer’s hair isn’t dirty. The barber could change shop policy to offer a reduced price haircut to customers who have just washed their hair before coming to the barbershop.