**Exercise 1-1A**

|  |  |  |
| --- | --- | --- |
|  | **Managerial Accounting** | **Financial Accounting** |
| **a.** |  | **X** |
| **b.** | **X** |  |
| **c.** |  | **X** |
| **d.** |  | **X** |
| **e.** | **X** |  |
| **f.** |  | **X** |
| **g.** | **X** |  |
| **h.** | **X** |  |
| **i.** |  | **X** |
| **j.** | **X** |  |

**Exercise 1-2A**

|  |  |  |
| --- | --- | --- |
|  | **Product Cost** | **Selling, General, and Administrative Cost** |
| **a.** | **X** |  |
| **b.** | **X** |  |
| **c.** |  | **X** |
| **d.** |  | **X** |
| **e.** |  | **X** |
| **f.** | **X** |  |
| **g.** |  | **X** |
| **h.** |  | **X** |
| **i.** |  | **X** |
| **j.** |  | **X** |

**Exercise 1-3A**

|  |  |  |
| --- | --- | --- |
| **Cost Category** | **Product /**  **SG&A** | **Asset /**  **Expense** |
| **Wages of production workers** | Product | Asset |
| **Advertising costs** | **SG&A** | **Expense** |
| **Promotion costs** | **SG&A** | **Expense** |
| **Production supplies** | Product | Asset |
| **Depreciation on administration building** | **SG&A** | **Expense** |
| **Depreciation on manufacturing equipment** | **Product** | **Asset** |
| **Research and development costs** | **SG&A** | **Expense** |
| **Cost to set up manufacturing equipment** | Product | Asset |
| Utilities used in manufacturing facility | Product | Asset |
| **Cars for sales staff** | **SG&A** | **Asset** |
| **Real estate tax levied on a factory** | **Product** | **Asset** |
| **General office supplies** | **SG&A** | **Asset** |
| **Raw materials used in the manufacturing process** | Product | Asset |
| **Costs to rent office equipment** | **SG&A** | **Expense** |

**Exercise 1-4A**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Assets** | **=** | **Liab.** | **+** | **Equity** |  | **Rev.** | **–** | **Exp.** | **=** | **Net Inc.** |  |
| **1.** |  | **NA** |  | **I** |  | **D** |  | **NA** |  | **I** |  | **D** |  |
| **2.** |  | **I** |  | **I** |  | **NA** |  | **NA** |  | **NA** |  | **NA** |  |

**Exercise 1-5A**

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

# Exercise 1-6A

a. Payroll costs that would be classified as selling, general, and administrative expense include the following:

|  |  |
| --- | --- |
| Salary of the company president | $ 75,000 |
| Salary of the chief financial officer | 42,000 |
| Salary of the vice president of marketing | 40,000 |
| Salaries of administrative secretaries | 60,000 |
| Commissions paid to sales staff | 146,000 |
| Total | $363,000 |
|  |  |

b. Payroll costs that would be classified as product cost include the following:

|  |  |
| --- | --- |
| Salary of the vice president of manufacturing | $ 50,000 |
| Salary of middle managers in manufacturing plant | 147,000 |
| Wages of production workers | 703,500 |
| Salaries of engineers and maintenance crew | 133,500 |
| Total | $1,034,000 |
|  |  |

**Since 4,000 units of 5,000 finished products were sold, 80% (*i.e.* 4,000 ÷ 5,000) of the product cost would be classified as cost of goods sold. Therefore, the payroll cost that would be included in cost of goods sold is determined as follows:**

**$1,034,000 x 80% = $827,200**

**Alternatrive computation for the same result follows :**

**($1,034,000 ÷ 5,000) X 4,000 = $827,200**

**Exercise 1-7A**

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

# Exercise 1-8A

**a.**

|  |  |
| --- | --- |
| Raw materials purchased and used | $ 6,200 |
| Wages of production workers | 7,400 |
| Depreciation on manufacturing equipment | 4,400 |
| Total product cost | $18,000 |
|  |  |

**b. Cost of inventory per unit = $18,000 ÷ 3,000 = $6.00**

**Ending inventory in units = 3,000 – 2,400 = 600**

**Cost of ending inventory = $6.00 x 600= $3,600**

**c. Cost of goods sold = $6.00 x 2,400 = $14,400**

**Exercise 1-9A**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Upstream** | **Midstream** | **Downstream** |
| **Direct materials** |  | **x** |  |
| **Research and development** | **x** |  |  |
| **Product design** | **x** |  |  |
| **Manufacturing overhead** |  | **x** |  |
| **Sales salaries** |  |  | **x** |
| **Cost of delivering merchandise to customers** |  |  | **x** |
| **Cost to create a copyright** | **x** |  |  |
| **Salaries of product engineers** | **x** |  |  |
| **Salaries of production line workers** |  | **x** |  |
| **Direct labor** |  | **x** |  |
| **Cost of heating the manufacturing plant** |  | **x** |  |
| **Advertising expenses** |  |  | **x** |
| **Patent filing fees** | **x** |  |  |
| **Salary of company president** |  |  | **x** |
| **Depreciation on manufacturing equipment** |  | **x** |  |
| **Depreciation on office equipment** |  |  | **x** |

**Exercise 1-10A**

**a. The $8,000,000 of research and development cost is an upstream cost while packaging, shipping, and sales commissions are downstream costs.**

**b. Cost of goods sold: $45 x 400,000 = $18,000,000**

**Ending inventory: $45 x 40,000 = $1,800,000**

c.

|  |  |
| --- | --- |
| Upstream cost per unit, $8,000,000 ÷ 2,000,000 | $ 4.00 |
| Manufacturing cost per unit | 45.00 |
| Downstream costs per unit | 8.00 |
| Total cost | 57.00 |
| Plus: 25% profit margin, $57.00 x 25% | 14.25 |
| Price | $71.25 |

**d.**

|  |  |
| --- | --- |
| Income Statement | |
| Sales revenue ($71.25 X 400,000) | $ 28,500,000 |
| Cost of goods sold | (18,000,000) |
| Gross margin | 10,500,000 |
| Research and development | (8,000,000) |
| Selling expenses ($8 x 400,000) | (3,200,000) |
| Net income (Loss) | $ (700,000) |
|  |  |

e. The upstream cost of research and development is required by GAAP to be expensed in the period that it is incurred. However, the R&D is expected to result in overall sales of 2,000,000 units. The income statement for Year 1 includes the sales of only 400,000 units while recognizing the entire cost of R&D as expense. In other words, the net loss is only temporary and a result of timing difference.

# Exercise 1-11A

a. The three main components of product cost for a manufacturing entity are direct materials, direct labor, and manufacturing overhead.

b. The product cost in a merchandising company, such as a retail toy store, is relatively easy to determine. It includes vendor’s price charged on the invoice, freight cost, and other necessary costs to make the inventory available for sale. Measuring product cost for a manufacturing entity, though, requires a more complex system. First of all, the manufacturing firm has to classify its costs between product costs and period costs. The firm has to accumulate product costs such as direct materials, direct labor, and manufacturing overhead. Once the product costs have been accumulated, the firm has to classify the cost of a product that has been sold as expense, and the cost of an unsold product as inventory, an asset.

**Exercise 1-12A**

a. Event No. 1 represents the depreciation on the computers because no product inventory exists in a service organization. The cost of depreciation, thus, must be expensed.

b. The computers in a service organization must be expensed as explained in *Part a*. This transaction decreases the asset equipment and retained earnings, both balance sheet accounts. The transaction increases expense on the income statement.

The depreciation on production equipment in a manufacturing company decreases the equipment account and increases the inventory account. It does not affect the income statement until the product is completed and sold.

Exercise 1-13A

If Perez has effectively implemented a 100% just-in-time inventory system, the company can sell products without maintaining any inventory on hand. This is true if Perez instructs its suppliers to ship products directly to Perez’s customers when Perez receives customer orders.

Exercise 1-14A

a.

|  |  |
| --- | --- |
| Income Statement | |
| Sales revenue ($12 x 600) | $ 7,200 | |
| Cost of goods sold ($5 x 600) | (3,000) | |
| Gross margin | 4,200 | |
| Waste due to excess inventory ($5 x 100) | (500) | |
| Net income | $ 3,700 | |
|  |  | |

b.

|  |  |
| --- | --- |
| Income Statement | |
| Sales revenue ($12 x 700) | $8,400 | |
| Cost of goods sold ($5 x 700) | (3,500) | |
| Net income | $4,900 | |
|  |  | |

The opportunity cost of lost profit: ($12 – $5) x 100 = $700

c. If Ms. Shelton can arrange an effective JIT system, the T-shirts would be delivered by the supplier just in time for customers to purchase. To give an example of such a system, assume that the supplier sets up a simple T-shirt printing facility at Kemp School. The supplier could bring in enough generic T-shirts. When a customer wants to buy a T-shirt from Becky Shelton, the supplier could print the school’s special art design on a generic T-shirt and deliver the T-shirt to Ms. Shelton. In this JIT design, Ms. Shelton would not have to carry any inventory. The supplier would keep only generic product as inventory, which could be sold in other events.

If an effective JIT system is implemented, Ms. Shelton would not have to keep any inventory, and thus, would avoid the loss due to excessive inventory. Ms. Shelton would be able to meet all customer demand because the supplier could deliver whatever quantity of product that Ms. Shelton's customers demand. Therefore, Ms. Shelton could avoid the opportunity cost due to lost sales.

Exercise 1-15A

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

b. Reduced cost of inventory: $67,000 – $17,000 = $50,000

Finance cost: $50,000 x 5% = $2,500

Total eliminated inventory holding cost: $2,500 + $9,000 = $11,500

**Exercise 1-16A**

**a. While the entire $575,000 of transportation cost should have been expensed immediately, the CFO put the $575,000 into an inventory account. Since some of the inventory was not sold, some of the transportation cost is still in the inventory account. The computations are shown below:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | $575,000 |  |  |
| Misclassified cost per unit | = | ––––––––– | = | $115 per microscope |
|  |  | 5,000 |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of units in ending inventory: | | | | |
| Inventory Completed |  | 5,000 |  |  |
| Less Inventory Sold |  | (4,000) |  |  |
| Ending Inventory |  | 1,000 |  |  |
|  |  |  |  |  |
| The portion of transportation cost still in ending inventory is $115,000 ($115 x 1,000 units). | | | | |

**Instead of being in the inventory account, the $115,000 should have been expensed.  As a result, assets, retained earnings (equity), and net income are overstated by $115,000.  Expenses are understated by the same amount.  Revenue and liabilities are not affected.**

**b. The maximum penalty for an intentional misrepresentation is punishable by a fine of up to $5 million and imprisonment of up to 20 years.**

**Exercise 1-17A**

**The CFO and controller violated the Statement of Ethical Professional Practice on two major items: integrity and objectivity. Regarding integrity, the officers’ personal interests conflicted with the public interest because the officers reaped a bonus that they didn’t deserve. Moreover, their actions certainly discredited the accounting profession. Regarding objectivity, the officers didn’t communicate information fairly and objectively.**

Exercise 1-18A

The process of shipping the encased speakers back to Soundwaves Company by Walton Cabinet, Inc. is nonvalue-added. This process can be eliminated if Walton ships the product to Soundwaves’ customers directly.

**Problem 1-19A**

|  |  |  |
| --- | --- | --- |
| **Information Item:** | **Financial**  **Accounting** | **Managerial**  **Accounting** |
| **Estimates of future revenue** |  | **x** |
| **GAAP-based product cost** | **x** |  |
| **Salary of the manager of a particular branch of a bank** |  | **x** |
| **Salary expense for all company employees shown in the income statement** | **x** |  |
| **Historical-based information included in financial statements** | **x** |  |
| **Reporting rules established by government authorities** | **x** |  |
| **Reports designed for the company president** |  | **x** |
| **Daily time clock reports** |  | **x** |
| **A company’s annual report to stockholders** | **x** |  |
| **Budgets** |  | **x** |
| **Information provided to investors and creditors** | **x** |  |
| **Vacation schedules for key employees** |  | **x** |
| **Customer satisfaction survey results** |  | **x** |
| **Amount of total assets shown on the balance sheet** | **x** |  |

**Problem 1-20A**

**The following horizontal financial statements model is not required in the problem. It is provided to show the process of computation.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Event** |  | **Assets** | | | | | | | **=** | **Equity** | | |  | **Income Statement** | | | | |
|  |  |  |  |  |  | **Office** |  | **Manuf.** |  | **Common** |  |  |  |  |  |  |  |  |
| **No.** |  | **Cash** | **+** | **Invent.** | **+** | **Furn.\*** | **+** | **Equip\*.** | **=** | **Stock** | **+** | **Ret. Ear.** |  | **Rev.** | **–** | **Exp.** | **=** | **Net Inc.** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **1.** |  | **89,000** | **+** |  | **+** |  | **+** |  | **=** | **89,000** | **+** |  |  |  | **–** |  | **=** |  |
| **2a.** |  | **(32,000)** | **+** |  | **+** | **32,000** | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  |
| **2b.** |  |  | **+** |  | **+** | **(4,000)** | **+** |  | **=** |  | **+** | **(4,000)** |  |  | **–** | **4,000** | **=** | **(4,000)** |
| **3a.** |  | **(40,000)** | **+** |  | **+** |  | **+** | **40,000** | **=** |  | **+** |  |  |  | **–** |  | **=** |  |
| **3b.** |  |  | **+** | **6,000** | **+** |  | **+** | **(6,000)** | **=** |  | **+** |  |  |  | **–** |  | **=** |  |
| **4.** |  | **(12,000)** | **+** |  | **+** |  | **+** |  | **=** |  | **+** | **(12,000)** |  |  | **–** | **12,000** | **=** | **(12,000)** |
| **5.** |  | **(21,000)** | **+** | **21,000** | **+** |  | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  |
| **6.** |  | **(26,000)** | **+** | **26,000** | **+** |  | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  |
| **7a.** |  | **72,000** | **+** |  | **+** |  | **+** |  | **=** |  | **+** | **72,000** |  | **72,000** | **–** |  | **=** | **72,000** |
| **7b.** |  |  | **+** | **(42,400)** | **+** |  | **+** |  | **=** |  | **+** | **(42,400)** |  |  | **–** | **42,400** | **=** | **(42,400)** |
| **Total** |  | **30,000** | **+** | **10,600** | **+** | **28,000** | **+** | **34,000** | **=** | **89,000** | **+** | **13,600** |  | **72,000** | **–** | **58,400** | **=** | **13,600** |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**\*Record accumulated depreciation as negative amounts under these columns.**

**Problem 1-20A (continued)**

**a.**

|  |  |
| --- | --- |
|  |  |
| **Direct materials** | **$26,000** |
| **Direct labor** | **21,000** |
| **Manufacturing overhead** | **6,000\*** |
| **Total product cost** | **53,000** |
| **Divided by** | **÷10,000** |
| **Average cost per unit** | **$5.30** |
|  |  |

**\* Depreciation of manufacturing equipment:**

**($40,000 − $4,000) ÷ 6 = $6,000**

**b. Cost of Goods Sold: $5.30 \* 8,000 = $42,400**

**c. Ending Inventory: $5.30 \* (10,000 ~~−~~ 8,000) = $10,600**

**d. $13,600**

**e. $13,600**

**f. $30,000 + $10,600 + $28,000 + $34,000 = $102,600**

Problem 1-21A

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Event** |  | **Assets** | | | | | | | **=** | **Equity** | | |  | **Income Statement** | | | | | |
|  |  |  |  |  |  | **Manuf.** |  | **Office** |  | **Common** |  |  |  | **Rev.** | **–** | **Exp.** | **=** | | **Net Inc.** |
| **No.** |  | **Cash** | **+** | **Invent.** | **+** | **Equip.\*** | **+** | **Furn.\*** | **=** | **Stock** | **+** | **Ret. Ear.** |  |
| **1.** |  | **68,000** | **+** |  | **+** |  | **+** |  | **=** | **68,000** | **+** |  |  |  | **–** |  | **=** |  | |
| **2.** |  | **(8,700)** | **+** | **8,700** | **+** |  | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  | |
| **3.** |  | **(4,500)** | **+** |  | **+** |  | **+** |  | **=** |  | **+** | **(4,500)** |  |  | **–** | **4,500** | **=** | **(4,500)** | |
| **4.** |  | **(10,000)** | **+** | **10,000** | **+** |  | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  | |
| **5a.** |  | **(9,600)** | **+** |  | **+** |  | **+** | **9,600** | **=** |  | **+** |  |  |  | **–** |  | **=** |  | |
| **5b.** |  |  | **+** |  | **+** |  | **+** | **(2,000)** | **=** |  | **+** | **(2,000)** |  |  | **–** | **2,000** | **=** | **(2,000)** | |
| **6a.** |  | **(16,000)** | **+** |  | **+** | **16,000** | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  | |
| **6b.** |  |  | **+** | **3,000** | **+** | **(3,000)** | **+** |  | **=** |  | **+** |  |  |  | **–** |  | **=** |  | |
| **7a.** |  | **35,000** | **+** |  | **+** |  | **+** |  | **=** |  | **+** | **35,000** |  | **35,000** | **–** |  | **=** | **35,000** | |
| **7b.** |  |  | **+** | **(14,000)** | **+** |  | **+** |  | **=** |  | **+** | **(14,000)** |  |  | **–** | **14,000** | **=** | **(14,000)** | |
| **Total** |  | **54,200** | **+** | **7,700** | **+** | **13,000** | **+** | **7,600** | **=** | **68,000** | **+** | **14,500** |  | **35,000** | **–** | **20,500** | **=** | **14,500** | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |

**\*Record accumulated depreciation as negative amounts under these columns.**

Problem 1-22A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Gibson Company | | | | |
|  | Income Statement for Year 1 | |  | Balance Sheet as of 12/31/Year 1 | |
|  | Sales revenue | $9,000 |  | Assets |  |
|  | Cost of goods sold1 | (7,200) |  | Cash3 | $12,250 |
|  | Gross margin | 1,800 |  | Fin. goods inventory1 | 800 |
|  | Administrative expense2 | (750) |  | Total assets | $13,050 |
|  | Net income | $ 1,050 |  |  |  |
|  |  |  |  | Equity |  |
|  |  |  |  | Common stock | $12,000 |
|  |  |  |  | Retained earnings | 1,050 |
|  |  |  |  | Total equity | $13,050 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1 The product costs include $4,700 for materials, $2,400 for labor, and $900 for overhead. Accordingly, $8,000 (*i.e.*, $4,700 + $2,400 + $900) was used to make the 400 units of product. The cost per unit is $20.00 (*i.e.* $8,000 400 units). Since 360 units were sold, ending inventory will be composed of 40 units (*i.e.* 400 units – 360 units). The amount of cost of goods sold is $7,200 (*i.e.*, $20.00 x 360 units). The balance in ending inventory would be $800 (*i.e.*, $20.00 x 40 units).

2 Administrative expenses are composed of $350 administrative salaries + $400 administrative rent = $750.

3 Cash balance: $12,000 – $4,700 – $2,400 – $900 – $350 – $400 + $9,000 = $12,250.

**Problem 1-23A**

**a. Upstream costs = $30,000 research and development + $20,000 fashion design = $50,000**

**b. Downstream costs = $25,000 advertising + $45,000 administrative costs = $70,000**

**c. Midstream costs = ($15 direct materials + $17 direct labor + $8 manufacturing overhead) x 4,000 units = $160,000**

**d. Sales price = GAAP defined product cost x 150%**

**Sales Price = ($15 direct materials + $17 direct labor + $8 manufacturing overhead) x 1.5 = $60**

|  |  |
| --- | --- |
| **Sales revenue ($60 price x 4,000 units)** | **$240,000** |
| **Cost of goods sold ($40 cost x 4,000 units)** | **(160,000)** |
| **Gross margin** | **80,000** |
| **General, selling, and administrative costs** |  |
| **Upstream costs (R&D, and Design)** | **(50,000)** |
| **Downstream costs (Administrative and Advertising)** | **(70,000)** |
| **Net loss** | **$ (40,000)** |

**e.**

**f. It appears that management failed to give appropriate consideration to upstream and downstream costs when pricing the product. Only the GAAP based product cost was used to determine the price. The total cost of making a phone case is upstream cost + midstream cost + downstream cost.**

**Total per unit costs:**

**Midstream cost = ($15 direct materials + $17 direct labor + $8 manufacturing overhead) = $40**

**Upstream cost = ($50,000 R&D and Design) / 4,000 units = $12.50**

**Downstream cost = ($70,000 Administrative and Advertising) / 4,000 units = $17.50**

**Total cost = $40 Midstream + $12.50 Upstream + $17.50 Downstream = $70.**

Note that the selling price of $60 is below the total cost per unit of $70. This explains the loss incurred by the company.

Problem 1-24A

a.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Wang Company | | | | |
|  | Income Statement for Year 1 | |  | Balance Sheet as of 12/31/Year 1 | |
|  | Sales revenue | $88,000 |  | Assets |  |
|  | Operating expenses1 | (65,000) |  | Cash2 | $93,000 |
|  | Net income (Loss) | $23,000 |  | Total assets | $93,000 |
|  |  |  |  |  |  |
|  |  |  |  | Equity |  |
|  |  |  |  | Common stock | $70,000 |
|  |  |  |  | Retained earnings | 23,000 |
|  |  |  |  | Total equity | $93,000 |
|  |  |  |  |  |  |

1 The entire $65,000 expenditure is a period cost that is recognized as an expense.

2 The cash balance will be the same for all three scenarios. The company acquires $70,000 of capital, earns $88,000 sales revenue and spends $65,000, thereby leaving a $93,000 ending balance. Do not be confused by the fact that the $65,000 is used to pay for different things under the alternative scenarios. The cash outflow is always $65,000 regardless of what is bought.

b.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Wang Company | | | | |  |
|  | Income Statement for Year 1 | |  | Balance Sheet as of 12/31/Year 1 | |  |
|  | Sales revenue | $88,000 |  | Assets |  |  |
|  | Depreciation exp.1 | (13,000) |  | Cash | $ 93,000 |  |
|  | Net income | $75,000 |  | Rental equipment | 65,000 |  |
|  |  |  |  | Accumulated dep.1 | (13,000) |  |
|  |  |  |  | Total assets | $145,000 |  |
|  |  |  |  |  |  |  |
|  |  |  |  | Equity |  |  |
|  |  |  |  | Common Stock | $ 70,000 |  |
|  |  |  |  | Retained earnings | 75,000 |  |
|  |  |  |  | Total equity | $145,000 |  |
|  |  |  |  |  |  |  |

1 The $65,000 was used to purchase automobiles that had 5-year useful lives with no salvage value. The depreciation charge is $13,000 [*i.e.*, ($65,000 - 0) 5 years]. Since the solution applies to the first year of operation, the amount in the accumulated depreciation account and the amount in depreciation expense are equal.

Problem 1-24A (continued)

c.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Wang Company | | | | |  |
|  | Income Statement for Year 1 | |  | Balance Sheet as of 12/31/Year 1 | |  |
|  | Sales revenue | $88,000 |  | Assets |  |  |
|  | Cost of goods sold1 | (28,500) |  | Cash | $ 93,000 |  |
|  | Gross margin | 59,500 |  | Finished goods inv. | 9,500 |  |
|  | Administrative expense2 | (5,000) |  | Mfg. equipment | 30,000 |  |
|  | Net income | $54,500 |  | Accumulated dep.1 | (8,000) |  |
|  |  |  |  | Total assets | $124,500 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  | Equity |  |  |
|  |  |  |  | Common stock | $70,000 |  |
|  |  |  |  | Retained earnings | 54,500 |  |
|  |  |  |  | Total equity | $124,500 |  |
|  |  |  |  |  |  |  |

1 The product costs are $10,000 for materials, $20,000 for labor, and $8,000 for overhead. The overhead cost results from depreciation on the manufacturing equipment [*i.e.*, ($30,000 cost - $6,000 salvage) 3 year life]. Accordingly, total product costs amount to $38,000 (*i.e.*, $10,000+$20,000+$8,000). The cost per unit is $19 (*i.e.,* $38,000 2,000 units). Since 1,500 units were sold, ending inventory will be composed of 500 units (*i.e.,* 2,000 units - 1,500 units). The amount of cost of goods sold is $28,500 (*i.e.*, $19 x 1,500 units). The balance in ending inventory would be $9,500 (*i.e.*, $19 x 500 units).

2 Salaries of sales and administrative employees

**d. It is highly unlikely that Wang can determine the exact cost of any particular unit of product. Materials and labor usage will differ slightly between units of the same product. Cost averaging smoothes these differences across units of the same product.**

**Problem 1-25A**

**a. Annual inventory holding cost:**

**($1,200,000 x 10%) + ($8,000 x 12) = $216,000**

**b. A JIT system should enable Kenta to receive raw materials just in time for production. Therefore, it virtually eliminates the need to hold inventory. The inventory holding cost can be eliminated as well.**

**c. Establishing a most-favored customer status with reliable suppliers could assure a steady supply of raw materials even when shortages exist for other customers. Such assurance can almost eliminate the need for maintaining raw material inventories.**

**Problem 1-26A**

**CIA Review normally orders 10 % more books than expected. When the expected enrollment is 200 students, the firm would order 220 books.**

**a. 200 students enroll in the course:**

|  |  |  |
| --- | --- | --- |
| **Revenue ($2,000 x 200)** |  | **$400,000** |
| **Expenses** |  |  |
| **Cost of textbooks ($150 x 220)** | **$33,000** |  |
| **Cost of teachers** | **50,000** |  |
| **Other operating expenses** | **75,000** |  |
| **Total expenses** |  | **158,000** |
| **Net income** |  | **$242,000** |

**Cost of unused books: [(220 – 200) x $150] = $3,000.**

**b. 240 students attempt to register, but only 220 students can be accepted:**

|  |  |  |
| --- | --- | --- |
| **Revenue ($2,000 x 220)** |  | **$440,000** |
| **Expenses** |  |  |
| **Cost of textbooks ($150 x 220)** | **$33,000** |  |
| **Cost of teachers** | **50,000** |  |
| **Other operating expenses** | **75,000** |  |
| **Total expenses** |  | **158,000** |
| **Net income** |  | **$282,000** |

**If all 240 students could be** **accepted, the income statement would be as follows:**

|  |  |  |
| --- | --- | --- |
| **Revenue ($2,000 x 240)** |  | **$480,000** |
| **Expenses** |  |  |
| **Cost of textbooks ($150 x 240)** | **$36,000** |  |
| **Cost of teachers** | **50,000** |  |
| **Other operating expenses** | **75,000** |  |
| **Total expenses** |  | **161,000** |
| **Net income** |  | **$319,000** |

**The lost profit resulting from rejecting 20 additional students is $37,000 ($319,000 – $282,000).**

**Problem 1-26A (continued)**

**c. 200 students enrolled under a JIT system:**

|  |  |  |
| --- | --- | --- |
| **Revenue ($2,000 x 200)** |  | **$400,000** |
| **Expenses** |  |  |
| **Cost of textbooks ($160 x 200)** | **$32,000** |  |
| **Cost of teachers** | **50,000** |  |
| **Other operating expenses** | **75,000** |  |
| **Total expenses** |  | **157,000** |
| **Net income** |  | **$243,000** |

**The savings from eliminating the cost of excessive books exceeds the increased cost for the required number of books. Therefore, the total expenses using the JIT system are less than those under the traditional inventory system in *requirement a*. Since the revenues are the same, the JIT system results in a greater net income than the traditional system.**

**d. 240 students enrolled under the JIT system**

|  |  |  |
| --- | --- | --- |
| **Revenue ($2,000 x 240)** |  | **$480,000** |
| **Expenses** |  |  |
| **Cost of textbooks ($160 x 240)** | **$38,400** |  |
| **Cost of teacher** | **50,000** |  |
| **Other operating expenses** | **75,000** |  |
| **Total expenses** |  | **163,400** |
| **Net income** |  | **$316,600** |

**The additional revenue from 20 students who would have been turned away under the condition of *requirement b* exceeds the additional cost of books required under the JIT system. Therefore, the JIT system results in a greater net income than the traditional system*.***

**Problem 1-26A (continued)**

**e. Students who are denied enrollment may develop a negative image of CIA Review, Inc. The negative image could become widespread when the disgruntled students complain to their friends. The JIT system not only improves net income, but improves customer satisfaction by allowing everyone entry into the course.**

**Problem 1-27A**

**a. Option No. 1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Campbell Manufacturing Company | | | | |  |
|  | Income Statement | |  | Balance Sheet | |  |
|  | Sales revenue | $140,000 |  | Assets |  |  |
|  | Cost of goods sold1 | (60,000) |  | Cash2 | $ 85,000 |  |
|  | Gross margin | 80,000 |  | Finished goods inv.3 | 15,000 |  |
|  | Sell., gen., & adm. exp. | (60,000) |  | Total assets | $100,000 |  |
|  | Net income | $20,000 |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  | Equity |  |  |
|  |  |  |  | Common stock | $ 80,000 |  |
|  |  |  |  | Retained earnings | 20,000 |  |
|  |  |  |  | Total equity | $100,000 |  |
|  |  |  |  |  |  |  |

1**$75,000 (Total product cost) ÷ 5,000 = $15.00 per unit. $15.00 x 4,000 = $60,000.**

**2$80,000 + $140,000 - $75,000 - $60,000 = $85,000**

**3Inventory: $15.00 x 1,000 = $15,000.**

**Problem 1-27A (continued)**

**a. Option 2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Campbell Manufacturing Company | | | | |  |
|  | Income Statement | |  | Balance Sheet | |  |
|  | Sales revenue | $140,000 |  | Assets |  |  |
|  | Cost of goods sold1 | (108,000) |  | Cash | $ 85,000 |  |
|  | Gross margin | 32,000 |  | Finished goods inv.2 | 27,000 |  |
|  | Sell., gen., & adm. exp. | 0 |  | Total assets | $112,000 |  |
|  | Net income | $32,000 |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  | Equity |  |  |
|  |  |  |  | Common Stock | $ 80,000 |  |
|  |  |  |  | Retained earnings | 32,000 |  |
|  |  |  |  | Total equity | $112,000 |  |
|  |  |  |  |  |  |  |

**1Total product cost: $75,000 + $60,000 = $135,000. Product cost per unit: $135,000 ÷ 5,000 = $27.00**

Cost of goods sold: $27.00 x 4,000 = $108,000.

**2Inventory: $27.00 x 1,000 = $27,000.**

**Problem 1-27A (continued)**

**b. Option No. 2 results in financial statements that are more likely to leave a favorable impression on investors and creditors because the net income under option No. 2 is $12,000 greater than that under option No. 1.**

**c. President’s bonus under option No. 1: $20,000 x 20% = $4,000**

**President’s bonus under option No. 2: $32,000 x 20% = $6,400**

**Option No. 2 provides the president with a higher bonus.**

**d. Income tax expense under option No. 1:**

**$20,000 x 30% = $6,000**

**Income tax expense under option No. 2:**

**$32,000 x 30% = $9,600**

**Option No. 1 minimizes the amount of the company’s income tax expense.**

**e. Option No. 2 provides the president with a higher bonus. However, option No. 1 minimizes the amount of the company’s income tax expense. As a result, these two options reveal a conflict of interest between the company and its president. To avoid the conflict of interest, the company can offer a bonus plan that is tied to the company’s stock price instead of net income on financial statements. To the extent that the market is efficient, it will reward performance that adds value to a company by bidding up the company’s stock price. An efficient market is not deceived by accounting policies that are designed solely to manipulate financial statements.**

**Problem 1-28A**

**a. (1) Separation of duties – Ted exercised control over both purchasing and receiving functions. (2) Failure to force extended absences – Ted was always around. He never took vacations. Indeed, the embezzlement was discovered when Ted was in the hospital. It may have been discovered much earlier had Ted been required to take vacations. (3) Lack of prenumbered documents. The extent of the embezzlement could have been more easily determined had the purchase order forms been prenumbered. (4) Lack of physical control – The accounting records should have been kept under lock and key thereby preventing Ted from stealing and destroying the documents.**

**b. (1) Opportunity – Lack of internal controls described in the answer to part a. (2) Pressure – Ted had a fanatical desire to help the underprivileged children. (3) Rationalization – Ted had convinced himself that the good he was doing to help the children justified the wrong he was doing by embezzling from the company. Doing the wrong thing for the right reasons does not justify the wrong doing.**

**Problem 1-29A**

a. Value Chain

Research and development

**Ice cream shops sell the product to the public.**

Vernon advertises the ice cream.

Vernon processes the materials to make ice cream.

Distribute to ice cream shops.

**Purchase materials from a wholesale supplier.**

**b. Vernon’s competitors engage in activities similar to Vernon's for materials acquisition, product manufacturing, product distribution, and advertising. The value-added activity that Vernon has created is its research and development effort, which resulted in a new product for consumers.**