# CHAPTER 2 BASIC MANAGERIAL ACCOUNTING CONCEPTS

## DISCUSSION QUESTIONS

**1.** A cost object is something for which you want to know the cost. For example, a cost object may be the human resources department of a company. The costs related to that cost object might include salaries of employees of that department, telephone costs for that department, and depreciation on office equipment. Another example is a customer group of a company. Atlantic City and Las Vegas casinos routinely treat heavy gamblers to free rooms, food, and drink. The casino owners know the benefits yielded by these high rollers and need to know the costs of keeping them happy, such as the opportunity cost of lost revenue from the rooms, the cost of the food, and so on.

**2.** Accumulating costs is the way that costs are measured and tracked. Assigning costs is linking costs to some cost object. For example, a company accumulates or tracks costs by entering them into the accounting records. Direct materials would be entered into the materials account; direct labour would be entered into the direct labour account. Then, these costs are assigned to units of product.

**3.** A direct cost is one that can be traced to the cost object, typically by physical observation. An indirect cost cannot be traced to the cost object. The same cost can be direct for one purpose and indirect for another. For example, the salaries paid to purchasing department employees in a factory are a direct cost to the purchasing department but an indirect cost (overhead) to units of product.

**4.** The cost of goods manufactured is the sum of direct materials, direct labour, and overhead used in producing the units completed in a factory.

**5.** Prime cost is the sum of direct materials and direct labour. Conversion cost is the sum of direct labour and overhead. Total product cost consists of direct materials, direct labour, and overhead. This is not equal to the sum of prime cost and conversion cost because then direct labour would be double counted.

**6.** A product is tangible in that you can see, feel, and take it with you. Examples of products include a tube of toothpaste, a car, or an orange. A service is a task or activity performed for a customer. For example, the dental hygienist who cleans your teeth provides a service.

**7.** Cost is the amount of cash or cash equivalent sacrificed for goods and/or services that are expected to bring a current or future benefit to the organization. An expense is an expired cost; the benefit has been used up.

**8.** A period cost is one that is expensed immediately, rather than being inventoried like a product cost.

**9.** Allocation means that an indirect cost is assigned to a cost object using a reasonable and convenient method. Since no causal relationship exists, allocating indirect costs is based on convenience or some assumed link-age.

**10.** Manufacturing overhead includes all product costs other than direct materials and direct labour. It is because the remaining manufacturing (product) costs are gathered into one category that overhead is often thought of as a “catchall.”

**11.** Direct materials purchases are first entered into the materials inventory. They may or may not be used during the month. Only when the materials are withdrawn from inventory for use in production are they known as “direct materials.”

**12.** The percentage column on the income statement gives some insight into the relative spending on the various expense categories. These percentages can then be compared with those of other firms in the same industry to see if the company’s spending appears to be in line or out of line with the experiences of others.

**13.** The income statement for a manufacturing firm includes the cost of goods sold, which is the sum of direct materials, direct labour, and overhead. The income statement for a service firm includes the cost of services sold. There are no beginning or ending inventories in a service organization.

**14.** Selling costs are the costs of selling and delivering products and services. Examples include free samples, advertising, sponsorship of sporting events, commissions on sales, and the depreciation on delivery trucks (such as Coca-Cola or Pepsi trucks).

**15.** The cost of goods manufactured is the cost of direct materials, direct labour, and overhead for the units produced (completed) during a time period. The cost of goods sold is the cost of direct materials, direct labour, and overhead for the units sold during a time period. The number of units produced is not necessarily equal to the number of units sold during a period. For example, a company may produce 1,000 pairs of jeans in a month but sell only 900 pairs.

## CORNERSTONE EXERCISES

##### Cornerstone Exercise 2–1

Direct materials $ 48,000

Direct labour 80,000

Manufacturing overhead 112,000

Total product cost $240,000

Per-unit product cost =  = $30

Therefore, one hockey stick costs $30 to produce.

##### Cornerstone Exercise 2–2

##### Direct materials $ 48,000

Direct labour 80,000

Total prime cost $128,000

Per-unit prime cost =  = $16

Direct labour $ 80,000

Manufacturing overhead 112,000

Total conversion cost $192,000

Per-unit conversion cost =  = $24

##### Cornerstone Exercise 2–3

Materials inventory, June 1 $ 42,000

Purchases 180,000

Materials inventory, June 30 (51,000)

Direct materials used in production $171,000

Cornerstone Exercise 2–4

Direct materials\* $171,000

Direct labour 165,000

Manufacturing overhead 215,000

Total manufacturing cost for June 551,000

WIP, June 1 60,000

WIP, June 30 (71,000)

Cost of Goods Manufactured $540,000

\*Direct materials = $42,000 + $180,000 – $51,000 = $171,000

[This was calculated in Cornerstone Exercise 2–3.]

Per-unit cost of goods manufactured =  = $30

##### Cornerstone Exercise 2–5

Slapshot Company

Cost of Goods Sold Statement

For the Month of June

Cost of goods manufactured $ 540,000

Finished goods inventory, June 1 160,000

Finished goods inventory, June 30 (215,000)

Cost of goods sold $ 485,000

Number of units sold:

Finished goods inventory, June 1 5,000

Units finished during June 18,000

Finished goods inventory, June 30 (7,000)

Units sold during June 16,000

Cornerstone Exercise 2–6

Slapshot Company

Income Statement

For the Month of June

Sales revenue (16,000 × $90) $1,440,000

Cost of goods sold 485,000

Gross margin 955,000

Less:

Selling expense:

Commissions (0.15 × $1,440,000) $216,000

Fixed selling expense 200,000 416,000

Administrative expense 115,000

Operating income $ 424,000

##### Cornerstone Exercise 2–7

Slapshot Company

Income Statement

For the Month of June

Percent\*

Sales revenue (16,000 × $90) $1,440,000 100.0

Cost of goods sold 485,000 33.7

Gross margin 955,000 66.3

Less:

Selling expense:

Commissions (0.15 × $1,440,000) $216,000

Fixed selling expense 200,000 416,000 28.9

Administrative expense 115,000 8.0

Operating income $ 424,000 29.4

\*Steps in calculating the percentages (the percentages are rounded):

1. Sales revenue percent =  = 1.00 or 100% (sales revenue is always 100% of sales revenue)

2. Cost of goods sold percent =  = 0.337 or 33.7%

3. Gross margin percent =  = 0.663 or 66.3%

Cornerstone Exercise 2–7 (Concluded)

4. Selling expense percent =  = 0.289 or 28.9%

5. Administrative expense percent =  = 0.0799 or 8.0%

6. Operating income percent =  = 0.294 or 29.4%

##### Cornerstone Exercise 2–8

Allstar Exposure

Income Statement

For the Past Month

Sales revenues $410,000

Less operating expenses:

Sales commissions $ 50,000

Technology 75,000

Research and development 200,000

Selling expenses 10,000

Administrative expenses 35,000 370,000

Operating income $ 40,000

## EXERCISES

Exercise 2–9

1.

Costs Salaries Commissions

Derek $25,000 $6,000

Lauren 30,000 1,500

Total $55,000 $7,500

2. All of Derek’s time is spent selling, so all of his salary cost is selling cost. Lauren spends two-thirds of her time selling, so $20,000 ($30,000 × 2/3) of her salary is selling cost. The remainder is administrative cost. All commissions are selling costs.

Selling Administrative

Costs Costs

Derek’s salary $25,000

Lauren’s salary 20,000 $10,000

Derek’s commissions 6,000

Lauren’s commissions 1,500

Total $52,500 $10,000

Exercise 2–10

a. Salary of cell supervisor—Direct

b. Power to heat and cool the plant in which the cell is located—Indirect

c. Materials used to produce the motors—Direct

d. Maintenance for the cell’s equipment—Indirect

e. Labour used to produce motors—Direct

f. Cafeteria that services the plant’s employees—Indirect

g. Depreciation on the plant—Indirect

h. Depreciation on equipment used to produce the motors—Direct

i. Ordering costs for materials used in production—Indirect

j. Engineering support—Indirect

k. Cost of maintaining the plant and grounds—Indirect

l. Cost of the plant’s personnel office—Indirect

m. Property tax on the plant and land—Indirect

##### Exercise 2–11

1. Direct materials—Product cost

Direct labour—Product cost

Manufacturing overhead—Product cost

Selling expense—Period cost

2. Direct materials $ 17,000

Direct labour 13,000

Manufacturing overhead 12,000

Total product cost $42,000

3. Unit product cost =  = $7.00

Exercise 2–12

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Product Cost | | | Period Cost | |
| Costs | Direct  Materials | Direct Labour | Factory  Overhead | Selling  Expense | Administrative Expense |
| Direct materials | $324,000 |  |  |  |  |
| Factory rent |  |  | $ 36,000 |  |  |
| Direct labour |  | $180,000 |  |  |  |
| Factory utilities |  |  | 9,450 |  |  |
| Supervision in   the factory |  |  | 75,000 |  |  |
| Indirect labour in   the factory |  |  | 45,000 |  |  |
| Depreciation on factory   factory equip-  ment |  |  | 13,500 |  |  |
| Sales   commissions |  |  |  | $ 40,500 |  |
| Sales salaries |  |  |  | 97,500 |  |
| Advertising |  |  |  | 55,500 |  |
| Depreciation on   the headquar-  ters building |  |  |  |  | $ 15,000 |
| Salary of the   corporate   receptionist |  |  |  |  | 45,000 |
| Other   administrative   costs |  |  |  |  | 262,500 |
| Salary of the   factory   receptionist |  |  | 42,000 |  |  |
| Totals | $324,000 | $180,000 | $220,950 | $193,500 | $322,500 |

2. Direct materials $324,000

Direct labour 180,000

Manufacturing overhead 220,950

Total product cost $724,950

3. Total period cost = $193,500 + $322,500 = $516,000

4. Unit product cost =  = $24.165

Exercise 2–12 (Concluded)

5. Costs directly associated with the manufacturing process are part of product costs. All other costs are treated as period costs.

Exercise 2–13

|  |  |  |  |
| --- | --- | --- | --- |
| Costs | Direct  Materials | Direct  Labour | Factory  Overhead |
| Jars | X |  |  |
| Sugar | X |  |  |
| Fruit | X |  |  |
| Pectin | X |  |  |
| Boxes | X |  |  |
| Depreciation on the factory building |  |  | X |
| Cooking equipment operators’ wages |  | X |  |
| Filling equipment operators’ wages |  | X |  |
| Packers’ wages |  | X |  |
| Janitors’ wages |  |  | X |
| Receptionist’s wages |  |  | X |
| Telephone |  |  | X |
| Utilities |  |  | X |
| Rental of Santa Claus suit |  |  | X |
| Supervisory labour salaries |  |  | X |
| Insurance on factory building |  |  | X |
| Depreciation on factory equipment |  |  | X |
| Oil to lubricate filling equipment |  |  | X |

##### Exercise 2–14

1. Direct materials $1,200,000

Direct labour 240,000

Manufacturing overhead 960,000

Total product cost $2,400,000

2. Product cost per unit = 

=  = $125.00

Exercise 2–15

1. Direct materials $1,200,000

Direct labour 240,000

Total prime cost $1,440,000

2. Prime cost per unit = 

=  = $75.00

3. Direct labour $ 240,000

Manufacturing overhead 960,000

Total conversion cost $1,200,000

4. Conversion cost per unit = 

=  = $62.50

##### Exercise 2–16

Materials inventory, June 1 $ 9,250

Materials purchases in June 38,750

Materials inventory, June 30 (4,000)

Direct materials used in June $44,000

##### Exercise 2–17

1. Finished goods inventory, January 1 2,100

Units completed during the year 54,000

Finished goods inventory, December 31 (2,750)

Units sold 53,350

2. Units sold 53,350

× Unit cost × $1,125

Cost of goods sold $60,018,750

Exercise 2–18

1. Materials inventory, March 1 $ 8,600

Materials purchases in March 14,000

Materials inventory, March 31 (2,300)

Direct materials used in March $20,300

2. Direct materials $20,300

Direct labour 20,000

Manufacturing overhead 36,000

Total manufacturing cost $76,300

3. Total manufacturing cost $76,300

Add: Work in process, March 1 1,700

Less: Work in process, March 31 (9,000)

Cost of goods manufactured $69,000

##### Exercise 2–19

Cost of goods manufactured $69,000\*

Add: Finished goods, March 1 7,000

Less: Finished goods, March 31 (6,500)

Cost of goods sold $69,500

\*See solution to Exercise 2–18.

Cost of goods sold is different than cost of goods manufactured because cost of goods sold is determined after taking both beginning and ending finished goods inventory into account.

##### Exercise 2–20

Direct materials $150,000

Direct labour 325,000

Manufacturing overhead 215,000

Cost of goods sold $690,000

*Note:* Because there were no beginning nor ending work-in-process or finished goods inventories, no adjustments were made for them in this calculation.

Exercise 2–21

1. Sales revenue = Number of units sold × Selling price

= 300,000 × $9

= $2,700,000

2. Jasper Company

Income Statement

For the Past Year

Sales revenue $2,700,000 100.0%

Cost of goods sold 690,000\* 25.6%

Gross profit $2,010,000 74.4%

Less:

Selling expense 437,000 16.2%

Administrative expense 854,000 31.6%

Operating income $719,000 26.6%

\*Direct materials $150,000

Direct labour 325,000

Manufacturing overhead 215,000

Cost of goods sold $690,000

3. It is useful to calculate the percentage of each cost as a percentage of sales to allow identification of trends within the company, to allow comparison to other different size companies, or to compare to industry statistics.

PROBLEMS

Problem 2–22

1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cost | Direct  Materials | Direct Labour | Factory  Overhead | Selling  and  Administrative |
| Hamburger meat | $4,500 |  |  |  |
| Buns, lettuce, pickles,   and onions | 800 |  |  |  |
| Frozen potato strips | 1,250 |  |  |  |
| Wrappers, bags, and   condiment packages | 600 |  |  |  |
| Other ingredients | 660 |  |  |  |
| Part-time employees’   wages |  | $7,250 |  |  |
| Andrew Gallant’s salary |  |  |  | $3,000 |
| Utilities |  |  | $1,500 |  |
| Rent |  |  | 1,800 |  |
| Depreciation, cooking   equipment and   fixtures |  |  | 600 |  |
| Advertising |  |  |  | 500 |
| Janitor’s wages |  |  | 520 |  |
| Janitorial supplies |  |  | 150 |  |
| Accounting fees |  |  |  | 1,500 |
| Taxes |  |  |  | 4,250 |
| Totals | $7,810 | $7,250 | $4,570 | $9,250 |

*Explanation of Classification*

Direct materials include all the food items that go into a burger bag, as well as the condiment packages and the wrappers and bags themselves. These materials go “out the door” in the final product. “Other ingredients” might include the oil to fry the potato strips and grease the frying surface for the hamburgers, and the salt for the fries. They are direct materials but could also be classified as overhead because of cost and convenience.

Problem 2–22 (Concluded)

Direct labour consists of the part-time employees who cook food and fill orders.

Manufacturing overhead consists of all indirect costs associated with the production process. These are utilities, the rent for the building, the depreciation on the equipment and fixtures, and the cost of janitorial wages and supplies.

Selling and administrative expense includes Andrew Gallant’s salary, advertising, accounting fees, and taxes.

2. Pop's Drive-Thru Burger Haven

Income Statement

For the Month of December

Sales ($3.50 × 10,000) $35,000

Less cost of goods sold:

Direct materials $7,810

Direct labour 7,250

Manufacturing overhead 4,570 19,630

Gross margin 15,370

Less: Selling and administrative expense 9,250

Net income $ 6,120

3. Elena’s simplifying assumptions were: (1) all part-time employees are production workers, (2) Andrew Gallant’s salary is for selling and administrative functions, (3) all building-related expense as well as depreciation on cooking equipment and fixtures are for production, and (4) all taxes are administrative expense. These make it easy to classify 100% of each expense as product cost or selling and administrative cost. The result is that she does not have to perform studies of the time spent by each employee on producing versus selling burger bags. In addition, it is likely that Andrew Gallant pitches in to help fry burgers or assemble burger bags when things get hectic. Of course, during those times, he is engaged in production—not selling or administration. The cost of determining just exactly how many minutes of each employee’s day is spent in production versus selling is probably not worth it. (Remember, accountants charge by the number of hours spent—the more time Elena spends separating costs into categories, the higher her fees.)

For this small business, there is little problem with misclassifying these expenses. The net income would be identical, although the gross profit would differ. Pop’s Drive-Thru Burger Haven is not a publicly traded company, and its income statements do not have to conform to GAAP. Outside use of the statements is confined to government taxing authorities and a bank (if a loan or line of credit is necessary). Elena’s accounting works well for those purposes.

Problem 2–23

1. Cost per page for black ink =  = $0.03

Total owed to Harry by Mary = $0.03 × 500 pages = $15

Total owed to Harry by Katerina = $0.03 × 1,000 pages = $30

2. Cost per sheet for paper =  = $0.005

Total cost for Mary = 500 pages × ($0.03 + $0.005) = $17.50

Total cost for Katerina = 1,000 pages × ($0.03 + $0.005) = $35.00

3. Cost per page for colour ink =  = $0.10

Number of black ink pages for Katerina = 1,000 × 0.8 = 800

Number of colour ink pages for Katerina = 1,000 × 0.2 = 200

Total owed to Harry by Katerina = ($0.03 × 800 pages) + ($0.10 × 200) = $44

Total cost to Katerina = [($0.03 + $0.005) × 800 pages] + [($0.10 + $0.005) × 200 pages] = $49

##### Problem 2–24

1. Direct materials = $120,000 + $192,000 – $59,400 = $252,600

2. Direct materials used $ 252,600

Direct labour 130,500

Manufacturing overhead 326,250

Total manufacturing cost for July 709,350

Work in process, July 1 63,000

Work in process, July 31 (97,500)

Cost of goods manufactured $674,850

3. Cost of goods manufactured $674,850

Finished goods inventory, July 1 69,600

Finished good inventory, July 31 (66,300)

Cost of goods sold $678,150

Problem 2–25

1. Direct materials $18

Direct labour 12

Manufacturing overhead 16

Unit product cost $46

Total product cost = $46 × 200,000 = $9,200,000

2. Infinity Inc.

Income Statement

For Last Year

Sales ($60 × 200,000) $12,000,000

Cost of goods sold 9,200,000

Gross margin 2,800,000

Less:

Commissions ($2 × 200,000) 400,000

Advertising expense 100,000

Administrative expenses 300,000

Operating income $ 2,000,000

No, we do not need to prepare a statement of cost of goods manufactured because there were no beginning or ending inventories of work in process. As a result, total manufacturing cost is equal to the cost of goods manufactured.

Problem 2–25 (Concluded)

3. The 10,000 tents in beginning finished goods inventory have a cost of $40, and that is lower than the year’s unit product cost of $46. The FIFO assumption says that beginning inventory is sold before current year production. Therefore, the cost of goods sold will be lower than it would be if there were no beginning inventory. This can be seen in the following statement of cost of goods sold.

Cost of goods manufactured ($46 × 200,000) $9,200,000

Add: Beginning inventory finished goods ($40 × 10,000) 400,000

Less: Ending inventory finished goods ($46 × 10,000) (460,000)

Cost of goods sold $9,140,000

Infinity Inc.

Revised Income Statement

For Last Year

Sales ($60 × 200,000) $12,000,000

Cost of goods sold 9,140,000

Gross margin 2,860,000

Less:

Commissions ($2 × 200,000) 400,000

Selling expense 100,000

Administrative expense 300,000

Operating income $ 2,060,000

##### Problem 2–26

1. Direct materials = $3,475 + $15,000 – $9,500 = $8,975

Hayward Company

Statement of Cost of Goods Manufactured

For the Month of May

Direct materials used $ 8,975

Direct labour 10,500

Manufacturing overhead:

Factory supplies $ 675

Factory insurance 350

Factory supervision 2,225

Materials handling 3,750 7,000

Total manufacturing cost for May 26,475

Work in process, May 1 12,500

Work in process, May 31 (14,250)

Cost of goods manufactured $ 24,725

Problem 2–26 (Concluded)

2. Hayward Company

**Statement of Cost of Goods Sold**

For the Month of May

Cost of goods manufactured $24,725

Finished goods inventory, May 1 6,685

Finished goods inventory, May 31 (4,250)

Cost of goods sold $27,160

##### Problem 2–27

1. c. These costs include direct materials, direct labour, and manufacturing overhead. The total of these three types of costs equals product cost.

2. a. If Linda returns to school, she will need to quit her job. The lost salary is the opportunity cost of returning to school.

3. b. If Randy were engaged in manufacturing a product, his salary would be a product cost. Instead, the product has been manufactured. It is in the finished goods warehouse waiting to be sold. This is a period cost.

4. j. Jamie is working at company headquarters, and her salary is part of administrative cost.

5. i. All factory costs other than direct materials or direct labour are, by definition, overhead.

6. d. The design engineer is estimating the total number of labour hours required to complete the manufacturing of a product. This total will be used to compute direct labour cost.

7. h. This is direct materials cost.

8. g. The sum of direct materials and direct labour is, by definition, prime cost.

9. f. The cost of converting direct materials into finished product is the sum of direct labour and manufacturing overhead. This is conversion cost.

10. e. The depreciation on the delivery trucks is part of selling cost, the cost of selling and delivering product.

Conceptual Connection: There are different definitions of cost because they are used for many different purposes and the purpose will determine how we must define costs.

Problem 2–28

1. Before the cost of services sold can be calculated, the cost of direct materials must be determined.

Cost of direct materials = $20,000 + $40,000 – $0 = $60,000

Direct materials used $ 60,000

Direct labour 800,000

Manufacturing overhead 100,000

Total cost of production last year 960,000

Beginning inventory of designs in process 60,000

Ending inventory of designs in process (100,000)

Cost of services sold $920,000

2. Berry Company

Income Statement

For Last Year

Sales ($2,100 × 700) $1,470,000

Cost of services sold 920,000

Gross margin 550,000

Selling expense 60,000

Administrative expense 150,000

Operating income $ 340,000

3. The dominant cost in the cost of services sold is direct labour. This cost is often the largest cost in a service company, especially when what is sold is professional time and expertise. Law and accounting firms also would show direct labour as the largest cost in the cost of services. It is possible for a service firm to show manufacturing overhead as the largest cost. For example, a free-standing radiology clinic may have overhead as the dominant cost, since the depreciation on equipment (e.g., x-ray machines, MRIs) would be very high.

4. Berry Company prepares custom building plans to order. That is, Berry does not start to design a project until a client contracts with it to do so. If Berry began to prepare plans on speculation, it would design the building first and then have a stock of finished plans ready to sell. In that case, there could well be an inventory of finished plans.

Problem 2–29

1. W. W. Phillips Company

Statement of Cost of Goods Manufactured

For Last Year

Direct materials $300,000\*

Direct labour 200,000

Manufacturing overhead:

Indirect labour $40,000

Rent, factory building 42,000

Depreciation, factory equipment 60,000

Utilities, factory 11,900 153,900

Total cost of product 653,900

Beginning work in process 13,040

Ending work in process (14,940)

Cost of goods manufactured $652,000

\*Direct materials used = $46,800 + $320,000 – $66,800 = $300,000

2. Average cost of one unit of product manufactured=  = $163

3. W. W. Phillips Company

Income Statement

For Last Year

Sales ($400 × 3,800\*) $1,520,000

Cost of goods sold 617,900\*\*

Gross margin 902,100

Selling expense:

Sales supervisor’s salary $ 90,000

Commissions 180,000 270,000

General administration expense 300,000

Operating income $ 332,100

\*Units sold = 4,000 + 500 – 700 = 3,800

\*\*Cost of goods sold = $652,000 + $80,000 – $114,100 = $617,900

Problem 2–30

1. The Internet payment of $40 is an expense that would appear on the income statement. This is because the Internet services are used up each month—Luisa cannot “save” any unused Internet time for the next month.

2. The opportunity cost is the $100 that Luisa would have made if she had been able to accept the movie role. It is an opportunity cost because it is the cost of the next best alternative to dog walking.

3. The price is $250 per month per dog. (*Note*: The price is charged by Luisa to her clients; it is not her cost.)

Total revenue for a month = $250 × 12 dogs = $3,000

##### Problem 2–31

1. Direct materials:

Magazine (5,000 × $0.40) $2,000

Brochure (10,000 × $0.08) 800 $2,800

Direct labour:

Magazine (× $10) 2,500

Brochures (× $10) 1,000 3,500

Manufacturing overhead:

Rent $1,400

Depreciation (× 350\*) 700

Setups 600

Insurance 140

Power 350 3,190

Cost of goods manufactured $9,490

\*Production is 20 units per printing hour for magazines and 100 units per printing hour for brochures, yielding monthly machine hours of 350 ( + ). This is also monthly labour hours as machine labour only operates the presses.

Problem 2–31 (Continued)

2. Direct materials $2,800

Direct labour 3,500

Total prime costs $6,300

Magazine:

Direct materials $2,000

Direct labour 2,500

Total prime costs $4,500

Brochure:

Direct materials $ 800

Direct labour 1,000

Total prime costs $1,800

3. Total monthly conversion cost:

Direct labour $3,500

Manufacturing overhead 3,190

Total $6,690

Magazine:

Direct labour $2,500

Manufacturing overhead:

Power ($1 × 250) $ 250

Depreciation ($2 × 250) 500

Setups (2/3 × $600) 400

Rent and insurance ($4.40 × 250 DLH)\* 1,100 2,250

Total $4,750

Brochures:

Direct labour $1,000

Manufacturing overhead:

Power ($1 × 100) 100

Depreciation ($2 × 100) 200

Setups (1/3 × $600) 200

Rent and insurance ($4.40 × 100 DLH)\* 440 940

Total $1,940

\*Rent and insurance cannot be traced to each product so the costs are assigned using direct labour hours:  = $4.40 per direct labour hour. The other overhead costs are traced according to their usage. Depreciation and power are assigned by using machine hours (250 for magazines and 100 for brochures):  = $1.00 per machine hour for power and  = $2.00 per machine hour for depreciation. Setups are assigned according to the time required. Since magazines use twice as much time, they receive twice the cost: Letting X = the proportion of setup time used for brochures, 2X + X = 1 implies a cost assignment ratio of 2/3 for magazines and 1/3 for brochures.

Problem 2–31 (Concluded)

4. Sales [(5,000 × $1.80) + (10,000 × $0.45)] $13,500

Less cost of goods sold 9,490

Gross margin 4,010

Less operating expenses:

Selling $ 500a

Administrative 1,500b 2,000

Income before taxes $ 2,010

aDistribution of goods is a selling expense.

bA case could be made for assigning part of his salary to production. However, since he is responsible for coordinating and managing all business functions, an administrative classification is more convincing.

##### Problem 2–32

1. The costs of the tent sales are accounted for as selling expense. The tent sales are designed to sell products and promote brand awareness. In fact, the most important objective is simply to increase awareness of the Stampede brand. As a result, these related costs are selling expense. The tent sales affect revenue and selling expense on the income statement of Stampede.

2. Revenue $ 20,000

Cost of goods sold (7,000)

Tent sale expense (14,300)

Tent sale loss $ (1,300)

A couple of actions could be taken. First, it could look for a more appropriate venue. The outer parking lot of a shopping centre, or even a large grocery store, would enable Stampede employees to easily load purchased product into customer cars. Second, the deejay could be dispensed with; instead, music could be played from CDs over the audio system in the truck. Third, Stampede could spend a year or so raising brand awareness in the Edmonton market before attempting another tent sale.

Problem 2–33

1. Quadrant Corporation

Statement of Cost of Goods Manufactured

For Year Ended September 30, 2015

Direct materials $ 36,392\*

Direct labour 45,772

Manufacturing overhead 27,556

Total cost of product 109.720

Beginning work in process 9,624

Ending work in process (10,007)

Cost of goods manufactured $109,337

\*Direct materials used = $2,685 + $36,699 – $2.992 = $36,392

2. Quadrant Corporation

Income Statement

For Year Ended September 30, 2015.

Sales $296,844 100.0%

Cost of goods sold 107,117\*\* 36.1%

Gross margin 189,727 63.9%

Selling expenses 76,251 25.7%

Administration expenses 68,728 23.2%

Corporate overhead……………………………….. 11,785 4.0%

Operating income 32,963 11.1%

Income tax expense……………………………….. 8,240 2.8%

Net income……………………………………… $ 24,723 8.3%

\*\*Cost of goods sold = $109,337 + $36,555 – $38,775 = $107,117

Problem 2–34

## SalesTrack Company

## Income Statement

## for the Year Ended October 31, 2015

##### Revenue $618,325

##### Cost of services:

##### Wages $225,284

##### Supplies 17,427 242,711

##### Gross margin 385,614

##### Selling expenses 126,827

##### Administrative expenses 97,626

##### Operating income 161,161

##### Income tax expense 45,125

##### Net income $116,036

##### A company can experience negative cash flow even if it generates a profit because changes in the balance sheet accounts can account for cash outflows that are not related to operations.

##### Problem 2–35

##### Answers will vary from student to student but each one should identify the facilities, maintenance costs, advertising, executive salaries as being common to all operations while the inventory of cars, wages, commissions, tools, brochures, and various other costs would be specific to the various parts of the business.

## Professional Examination Problem[[1]](#footnote-1)

Professional Examination Problem 2–36 MANUFACTURING COST—PRINCETON   
MANUFACTURING

**1.**

|  |  |  |
| --- | --- | --- |
| **Princeton Manufacturing Schedule of Cost of Goods Manufactured For the Year Ended December 31, 2015** | | |
| **Direct materials:** |  |  |
| **Beginning raw materials inventory, January 1** | **$  8,000** |  |
| **Plus: direct material purchases** | **47,000** |  |
|  | **55,000** |  |
| **Less: ending raw materials inventory, Dec. 31** | **4,000** |  |
| **Raw materials used** |  | **$ 51,000** |
| **Direct labour** |  | **30,000** |
| **Factory overhead:** |  |  |
| **Indirect materials** | **7,000** |  |
| **Indirect labour** | **3,000** |  |
| **Factory depreciation ($20,000 × .70)** | **14,000** |  |
| **Factory taxes** | **11,000** |  |
| **Utilities ($20,000 × .90)** | **18,000** |  |
| **Miscellaneous plant overhead** | **4,000** |  |
| **Plant repairs and maintenance** | **9,000** |  |
| **Fire insurance, factory equipment** | **3,000** |  |
| **Materials handling costs** | **8,000** | **77,000** |
| **Total manufacturing costs** |  | **158,000** |
| **Plus: beginning work-in-process inventory, January 1** |  | **19,000** |
|  |  |  |
| **Less: ending work-in-process inventory, Dec. 31** |  | **18,000** |
| **Cost of goods manufactured** |  | **$159,000** |

**Professional Examination Problem 2–36 (Concluded)**

**2.**

|  |  |
| --- | --- |
| **Princeton Manufacturing Schedule of Cost of Goods Sold For the Year Ended December 31, 2015** | |
|  |  |
| **Beginning finished goods inventory, January 1** | **$   25,000** |
| **Plus: cost of goods manufactured** | **159,000** |
| **Goods available for sale** | **$184,000** |
| **Less: ending finished goods inventory, December 31\*** | **77,000** |
| **Cost of goods sold\*** | **$107,000** |

|  |  |
| --- | --- |
| **\*Ending finished goods inventory and cost of goods sold:** | |
| **Gross profit:** |  |
| **Sales × 73.25%** |  |
| **$400,000 × .7325** | **$293,000** |
|  |  |
| **Cost of goods sold:** |  |
| **Sales – gross profit** |  |
| **$400,000 – $293,000** | **$107,000** |
|  |  |
| **Ending inventory:** |  |
| **Goods available for sale – cost of goods sold** |  |
| **$184,000 – $107,000** | **$77,000** |

**3.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Princeton Manufacturing** | | | |
| **Income Statement** | | | |
| **For the Year Ended December 31, 2015** | | | |
|  |  |  |  |
| **Sales** |  |  | **$400,000** |
| **Cost of goods sold** |  |  | **107,000** |
| **Gross profit** |  |  | **293,000** |
| **Operating expenses** | |  |  |  |
| **Selling expenses** | **$50,000** |  |  |
| **General and administrative** | **18,000** |  |  |
| **Depreciation ($20,000 × .30)** | **6,000** |  |  |
| **Marketing promotions** | **1,500** |  |  |
| **Utilities ($20,000 × .10)** | **2,000** |  |  |
| **Courier costs (office)** | **900** |  |  |
| **Customer service costs** | **3,000** |  | **81,400** |
| **Net income** |  |  | **$211,600** |

Professional Examination Problem 2–37

1. d. (1) direct cost (2) fixed cost

.

1. a. The cost, in total, does not change with changes in the volume of the cost driver.
2. a. $125 (Labour of $50 + Indirect costs of $75)

##### CASES

Case 2–38

1. Production Selling Administrative

(DL) Machine operators Utilities

(DL) Other direct labour Rent

(OH) Supervisory salaries CA fees

(DM) Pipe Adm. salaries

(OH) Tires and fuel Advertising

(OH) Depreciation

(OH) Salaries of mechanics

2. Traceable costs using equipment hours:

Machine operators $ 218,000

Other direct labour 265,700

Pipe 1,401,340

Tires and fuel 418,600

Depreciation, equipment 198,000

Salaries of mechanics 50,000

Total $ 2,551,640

Machine operators, tires and fuel, and depreciation are all directly caused by equipment usage, which is measured by equipment hours. One can also argue that the maintenance required is also a function of equipment hours and so the salaries of mechanics can be assigned using equipment hours. Pipe and other direct labour can be assigned using equipment hours because their usage should be highly correlated with equipment hours. That is, equipment hours increase because there is more pipe being laid. As hours increase, so does the pipe usage. A similar argument can be made for other direct labour. Actually, it is not necessary to use equipment hours to assign pipe or other direct labour because these two costs are directly traceable to jobs.

Traceable cost per equipment hour = 

= $140.20 per hour

##### Case 2–39

##### Income Statement

##### For One Year of Operation

##### High End Standard

##### Revenue $1,800,000 $1,200,000

##### Direct costs:

##### Cost of goods sold 945,000 480,000

##### Mechanic wages 240,000 240,000

##### Peter’s wages (50%) 50,000 50,000

##### Total direct 1,235,000 770,000

##### Indirect costs:

##### Depreciation 105,000 65,000

##### Rent 120,000 120,000

##### Utilities 18,000 18,000

##### Administration 50,000 50,000

##### Advertising 180,000 120,000

##### Peter’s wages (50%) 50,000 50,000

##### Total indirect 523,000 423,000

##### Income $ 42,000 $ 7,000

##### Revenue: 900 x $2,000 = $1,800,000; 1,200 x $1,000 = $1,200,000

##### COGS: 900 x $1,050 = $945,000; 1,200 x $400 = $480,000

##### Mechanic wages: 6 x $20 X2,000 = $240,000

##### Advertising: $15,000 per month x 12 = $180,000; $10,000 x 12 = $120,000

##### Case 2–39 (Concluded)

##### 2. Yes it makes sense for Peter to quit his job and open his own shop. Profits will be positive under each alternative and this is after he takes a salary of $100,000 per year.

##### 3. Peter should choose the high-end mufflers as they will generate a greater profit.

##### Case 2–40

1. Leroy should politely and firmly decline the offer. The offer includes an implicit request to use confidential information to help Jean win the bid. Use of such information for personal advantage is wrong. Leroy has a professional and personal obligation to his current employer. This obligation must take precedence over the opportunity for personal financial gain.

Corporate codes of conduct emphasize honesty and integrity. Leroy has a responsibility to act on behalf of his company, and clearly, disclosing confidential information acquired in the course of his work to a competitor would be prohibited. In addition, codes of corporate conduct also require employees to avoid conflicts of interest and to refuse any gift, favour, or hospitality that would influence employee actions inappropriately.

2. If Leroy agrees to review the bid, he will likely use his knowledge of his current employer’s position to help Jean win the bid. In fact, agreement to help probably would reflect a desire for the bonus and new job with the associated salary increase. Helping would likely ensure that Jean would win the bid. Leroy was concerned about the political fallout and subsequent investigation revealing his involvement—especially if he sent up a red flag by switching to his friend’s firm. An investigation may reveal the up-front bonus and increase the suspicion about Leroy’s involvement. There is a real possibility that Leroy could be implicated. Whether this would lead to any legal difficulties is another issue. At the very least, some tarnishing of his professional reputation and personal character is possible. Some risk to Leroy exists. The amount of risk, though, should not be a factor in Leroy’s decision. What is right should be the central issue, not the likelihood of getting caught.

## 

1. © 2010 CMA Ontario. Reproduced with Permission. [↑](#footnote-ref-1)