**EXERCISE 2–3 Fixed and Variable Cost Behavior [LO3]**

Koffee Express operates a number of espresso coffee stands in busy suburban malls. The fixed weekly expense of a coffee stand is $1,100 and the variable cost per cup of coffee served is $0.26.

*Required:*

1. Fill in the following table with your estimates of total costs and average cost per cup of coffee at the indicated levels of activity for a coffee stand. Round off the cost of a cup of coffee to the nearest tenth of a cent.

| | Cups of Coffee Served in a Week | | |
|---|---|---|---|
| | 1,800 | 1,900 | 2,000 |
| Fixed cost | ? | ? | ? |
| Variable cost | ? | ? | ? |
| Total cost | ? | ? | ? |
| Average cost per cup of coffee served | ? | ? | ? |

2. Does the average cost per cup of coffee served increase, decrease, or remain the same as the number of cups of coffee served in a week increases? Explain.

**EXERCISE 2–4 High-Low Method [LO4]**

The Edelweiss Hotel in Vail, Colorado, has accumulated records of the total electrical costs of the hotel and the number of occupancy-days over the last year. An occupancy-day represents a room rented out for one day. The hotel's business is highly seasonal, with peaks occurring during the ski season and in the summer.

| Month | Occupancy-Days | Electrical Costs |
|---|---|---|
| January | 2,604 | $6,257 |
| February | 2,856 | $6,550 |
| March | 3,534 | $7,986 |
| April | 1,440 | $4,022 |
| May | 540 | $2,289 |
| June | 1,116 | $3,591 |
| July | 3,162 | $7,264 |
| August | 3,608 | $8,111 |
| September | 1,260 | $3,707 |
| October | 186 | $1,712 |
| November | 1,080 | $3,321 |
| December | 2,046 | $5,196 |

*Required:*

1. Using the high-low method, estimate the fixed cost of electricity per month and the variable cost of electricity per occupancy-day. Round off the fixed cost to the nearest whole dollar and the variable cost to the nearest whole cent.
2. What other factors other than occupancy-days are likely to affect the variation in electrical costs from month to month?

**EXERCISE 2–5 Traditional and Contribution Format Income Statements [LO5]**

Redhawk, Inc., is a merchandiser that provided the following information:

| | |
|---|---|
| Number of units sold | 10,000 |
| Selling price per unit | $15 |
| Variable selling expense per unit | $2 |
| Variable administrative expense per unit | $1 |
| Total fixed selling expense | $20,000 |
| Total fixed administrative expense | $15,000 |
| Merchandise inventory, beginning balance | $12,000 |
| Merchandise inventory, ending balance | $22,000 |
| Merchandise purchases | $90,000 |

*Required:*

1. Prepare a traditional income statement.
2. Prepare a contribution format income statement.

**EXERCISE 2-6 Identifying Direct and Indirect Costs [LO6]**

The Empire Hotel is a four-star hotel located in downtown Seattle.

*Required:*

For each of the following costs incurred at the Empire Hotel, indicate whether it would most likely be a direct cost or an indirect cost of the specified cost object by placing an X in the appropriate column.

| | Cost | Cost Object | Direct Cost | Indirect Cost |
|---|---|---|---|---|
| Ex. | Room service beverages | A particular hotel guest | X | |
| 1. | The salary of the head chef | The hotel's restaurant | | |
| 2. | The salary of the head chef | A particular restaurant customer | | |
| 3. | Room cleaning supplies | A particular hotel guest | | |
| 4. | Flowers for the reception desk | A particular hotel guest | | |
| 5. | The wages of the doorman | A particular hotel guest | | |
| 6. | Room cleaning supplies | The housecleaning department | | |
| 7. | Fire insurance on the hotel building | The hotel's gym | | |
| 8. | Towels used in the gym | The hotel's gym | | |

**EXERCISE 2-7 Differential, Opportunity, and Sunk Costs [LO7]**

The Sorrento Hotel is a four-star hotel located in downtown Seattle. The hotel's operations vice president would like to replace the hotel's antiquated computer terminals at the registration desk with attractive state-of-the-art flat-panel displays. The new displays would take less space, would consume less power than the old computer terminals, and would provide additional security since they can only be viewed from a restrictive angle. The new computer displays would not require any new wiring. The hotel's chef believes the funds would be better spent on a new bulk freezer for the kitchen.

*Required:*

For each of the items below, indicate by placing an X in the appropriate column whether it should be considered a differential cost, an opportunity cost, or a sunk cost in the decision to replace the old computer terminals with new flat-panel displays. If none of the categories apply for a particular item, leave all columns blank.

| | Item | Differential Cost | Opportunity Cost | Sunk Cost |
|---|---|---|---|---|
| Ex. | Cost of electricity to run the terminals | X | | |
| 1. | Cost of the new flat-panel displays | | | |
| 2. | Cost of the old computer terminals | | | |
| 3. | Rent on the space occupied by the registration desk | | | |
| 4. | Wages of registration desk personnel | | | |
| 5. | Benefits from a new freezer | | | |
| 6. | Costs of maintaining the old computer terminals | | | |
| 7. | Cost of removing the old computer terminals | | | |
| 8. | Cost of existing registration desk wiring | | | |

**PROBLEM 2-21 High-Low Method; Predicting Cost [LO3, LO4]**

Golden Company's total overhead cost at various levels of activity are presented below:

| Month | Machine-Hours | Total Overhead Cost |
|---|---|---|
| March | 50,000 | $194,000 |
| April | 40,000 | $170,200 |
| May | 60,000 | $217,800 |
| June | 70,000 | $241,600 |

Assume that the overhead cost above consists of utilities, supervisory salaries, and maintenance. The breakdown of these costs at the 40,000 machine-hour level of activity is as follows:

| | |
|---|---|
| Utilities (variable) | $ 52,000 |
| Supervisory salaries (fixed) | 60,000 |
| Maintenance (mixed) | 58,200 |
| Total overhead cost | $170,200 |

The company wants to break down the maintenance cost into its variable and fixed cost elements.

*Required:*

1. Estimate how much of the $241,600 of overhead cost in June was maintenance cost. (Hint: To do this, it may be helpful to first determine how much of the $241,600 consisted of utilities and supervisory salaries. Think about the behavior of variable and fixed costs within the relevant range.)
2. Using the high-low method, estimate a cost formula for maintenance.
3. Express the company's total overhead cost in the form $Y = a + bX$.
4. What total overhead cost would you expect to be incurred at an activity level of 45,000 machine-hours?