

CHAPTER  
**12**

# Managerial Accounting and Cost-Volume-Profit Relationships

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**M12.1.**

Cost formula:

$$\begin{aligned} \text{Total cost} &= \text{Fixed cost} + \text{Variable cost} \\ &= (\$1,000 + 2,500 + 1,500) + (\$5.25 + 20.00 + 8.50 + 2.25 + 4.00) \text{ per unit} \\ &= \$5,000 + \$40 \text{ per unit} \end{aligned}$$

Total cost expected for 2,750 units of activity:

$$\begin{aligned} \text{Total cost} &= \$5,000 + (\$40 \times 2,750 \text{ units}) \\ &= \$5,000 + \$110,000 \\ &= \$115,000 \end{aligned}$$

**E12.9.**

	<u>Variable</u>	<u>Fixed</u>
Wages of assembly-line workers .....	x	_____
Depreciation--plant equipment .....	_____	x
Glue and thread.....	x	_____
Shipping costs .....	x	_____
Raw materials handling costs .....	x	_____
Salary of public relations manager .....	_____	x
Production run setup costs .....	x	_____
Plant utilities.....	x	x
Electricity cost of retail stores .....	x	x
Research and development expenses .....	x	x

**Note:** The last three items are each likely to have a mixed cost behavior pattern.

**E12.11.**

- a. Total cost = (\$320 fixed cost + (\$0.14 variable cost per mile \* 1,529 miles)) = **\$534.06**
- b. No, it would not be meaningful to calculate an average cost per mile, because that would involve unitizing the fixed expenses, and they do not behave on a per mile basis. Whatever average cost per mile was calculated would be valid only for the number of miles used in the calculation. An average cost for any other number of miles driven would be different, because the fixed expenses per mile would decrease for each additional mile driven.

**E13.11.**

	Product			Variable	Fixed
	Direct	Indirect	Period		
Wages of assembly-line workers...	x			x	
Depreciation-plant equipment ...		x			x
Glue and thread .....		x		x	
Outbound shipping costs.....			x	x	
Raw materials handling costs.....		x		x	
Salary of public relations manager			x		x
Production run setup costs .....		x		x	
Plant utilities .....		x		x	x
Electricity cost of retail stores.....			x	x	x
Research and development expenses .....			x	x	x

**Note:** The last three items are each likely to have a mixed cost behavior pattern.

**E13.12.**

	Product			Variable	Fixed
	Direct	Indirect	Period		
Raw materials .....	x			x	
Tape used to secure packed boxes of product .....		x		x	
Plant janitors' wages .....		x		x	x
Inventory clerks' wages .....			x	x	
Promotional expenses .....			x		x
Production workers' wages.....	x			x	
Production supervisors' salaries...		x			x
Sales force commissions.....			x	x	
Maintenance supplies used.....		x		x	
Controller's salary.....			x		x
Electricity cost for office building.....			x	x	x
Real estate taxes for factory .....		x			x
Real estate taxes for office building .....			x		x

**Note:** Janitors' wages and electricity probably have mixed cost behavior patterns. Electricity and real estate taxes for administrative areas would be a period cost.

