E5.3 (LO 1, 2), AN The controller of Norton Industries has collected the following monthly expense data for use in analyzing the cost behavior of maintenance costs.

Determine fixed and variable costs using the high-low method and prepare a graph.

Month Total

Maintenance Costs Total

Machine Hours

January $2,700 300

February 3,000 350

March 3,600 500

April 4,500 690

May 3,200 400

June 5,500 700

Instructions

a. Determine the fixed- and variable-cost components using the high-low method.

|  |  |  |
| --- | --- | --- |
|  | Hours | Maintenance cost |
| High AL | 700 | 5,500 |
| Low AL | 300 | 2,700 |
| Change | 400 | 2,800 |
| Variable cost per unit | 7 |  |
| Fixed cost Element |  |  |

Variable cost = 2,800/400 = 7

Fixed cost = Total Cost - Total Varible cost

= 5,500 - (700\*7)

=5,500 - 4,900

=600

E5.4 (LO 1), C Family Furniture Corporation incurred the following costs.

Classify variable, fixed, and mixed costs.

1. Wood used in the production of furniture. - Variable

2. Fuel used in delivery trucks. - Variable

3. Straight-line depreciation on the factory building. - Fixed

4. Screws used in the production of furniture. - Variable

5. Sales staff salaries. - Fixed

6. Sales commissions. - Variable

7. Property taxes. - Fixed

8. Insurance on buildings. - Fixed

9. Hourly wages of furniture craftsmen. - Variable

10. Salaries of factory supervisors. - Fixed

11. Utility expense. - Mixed

12. Telephone bill. - Mixed

Instructions

Identify the costs above as variable, fixed, or mixed.

BE5.7 (LO 3), AP Russell Inc. had sales of $2,200,000 for the first quarter of 2020. In making the sales, the company incurred the following costs and expenses.

Prepare a CVP income statement.

Variable Fixed

Cost of goods sold $920,000 $440,000

Selling expenses 70,000 45,000

Administrative expense 86,000 98,000

Prepare a CVP income statement for the quarter ended March 31, 2020.

|  |  |  |
| --- | --- | --- |
| Particulars | Amount in $ | Amount $ |
| Sales |  | $2,200,000 |
| Less: Variable Costs |  |  |
| Cost of Goods Sold | $920,000 |  |
| Selling expenses | 70,000 |  |
| Administrative Expenses | 86,000 | * 1,076,000 |
| Contribution |  | 1,124,000 |
| Less: Fixed Costs |  |  |
| Cost of Goods Sold | $440,000 |  |
| Selling Expenses | 45,000 |  |
| Administrative Expenses | 98,000 | -583,000 |
| Net Income |  | 541,000 |

BE5.8 (LO 4), AP Rice Company has a unit selling price of $520, variable costs per unit of $286, and fixed costs of $163,800. Compute the break-even point in units using (a) the mathematical equation and (b) unit contribution margin.

Compute the break-even point.

1. Mathematical equation:

Break-even point in unites = Fixed Cost/ (unit selling price - Unit Variable cost)

= $163,800/ (520 - 286)

= 163,800/ 234

= 700 units

1. Unite Contribution

UC Margin = 520 - 286 = 234

BE units = FIxed cost / UC margin

= $163,800/234

= 700 units

BE5.10 (LO 5), AP For Flynn Company, variable costs are 70% of sales, and fixed costs are $195,000. Management's net income goal is $75,000. Compute the required sales in dollars needed to achieve management's target net income of $75,000. (Use the contribution margin approach.)

Compute sales for target net income.

Sales in dollars needs to achieve target income =

(fixed const + required net income) / Contribution Margin %

= 195,000+75,000 / (100% - 70%)

= 270,000 / 30%

= 900,000

* When the Variable costs are 70 % of the sales, 30 % will be the Contribution Margin.

BE5.11 (LO 5), AP For Astoria Company, actual sales are $1,000,000, and break-even sales are $800,000. Compute (a) the margin of safety in dollars and (b) the margin of safety ratio.

Compute the margin of safety and the margin of safety ratio.

1. The margin of safety in dollars = Sales - Break-even sales

= $1,000,000 - 800,000 = $200,000

1. Margin of safety ratio = margin of safety in dollars / sales

= 200,000 / 1,000,000

= 20%