**Individual Assignment 3**

1. Helix Services, Inc., has been in business for six months. The following are basic operating data for that period.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Month | | | | | |
|  | July | Aug. | Sept. | Oct. | Nov. | Dec. |
| Service hours | 120 | 136 | 260 | 420 | 320 | 330 |
| Revenue | $6,000 | $6,800 | $13,000 | $21,000 | $16,000 | $16,500 |
| Operating costs | $4,300 | $5,300 | $ 7,100 | $11,200 | $ 9,100 | $10,600 |

**Required**

1. What is the average service revenue per hour for the six-month time period?
2. Use the high-low method to estimate the total monthly fixed cost and the variable cost per hour.
3. Determine the average contribution margin per hour.
4. Use the scattergraph method to estimate the total monthly fixed cost and the variable cost per hour.
5. Compare the results of the two methods and comment on the difference.
6. Freescale Manufacturing Company makes a product that it sells for $50 per unit. The company incurs variable manufacturing costs of $14 per unit. Variable selling expenses are $6 per unit, annual fixed manufacturing costs are $189,000, and fixed selling and administrative costs are $141,000 per year.

**Required**

Determine the break-even point in units and dollars using each of the following approaches:

1. Equation method.
2. Contribution margin per unit.
3. Contribution margin ratio.
4. Confirm your results by preparing a contribution margin income statement for the break-even sales volume.
5. Bella Company is considering the addition of a new product to its cosmetics line. The company has three distinctly different options: a skin cream, a bath oil, or a hair coloring gel. Relevant information and budgeted annual income statements for each of the products follow.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Relevant Information | | |
|  | Skin Cream | Bath Oil | Color Gel |
| Budgeted sales in units (a) | 71,000 | 111,000 | 39,000 |
| Expected sales price (b) | $8 | $4 | $12 |
| Variable costs per unit (c) | $5 | $2 | $7 |
| Income statements |  |  |  |
| Sales revenue (a x b) | $568,000 | $444,000 | $468,000 |
| Variable costs (a x c) | (355,000) | (222,000) | (273,000) |
| Contribution margin | 213,000 | 222,000 | 195,000 |
| Fixed costs | (153,000) | (186,000) | (155,000) |
| Net income | $ 60,000 | $ 36,000 | $ 40,000 |

**Required**

1. Determine the margin of safety as a percentage for each product.
2. For each product, determine the percentage change in net come that results from the 20% increase in sales. Which product has the highest operating leverage?
3. Assuming that management is pessimistic and risk averse, which product should the company add to its cosmetics line? Explain your answer.
4. Assuming that management is optimistic and risk aggressive, which product should the company add to its cosmetics line? Explain your answer.