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| 1. Jensen Company makes a product that sells for $38 per unit. The company pays $16 per unit for the variable costs of the product and incurs annual fixed costs of $176,000. Jensen expects to sell 21,000 units of product. |

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| **Required:** |
| Determine Jensen’s margin of safety expressed as a percentage. |

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| --- | --- |
| Margin of safety | % |

*Exercise 3-13A Cost-volume-profit relationship [LO 1, 2, 4, 6]*



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| 1. Feskin Corporation is a manufacturing company that makes small electric motors it sells for $36 per unit. The variable costs of production are $22 per motor, and annual fixed costs of production are $196,000. |

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| **Required:** |

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| --- | --- |
| **a.** | How many units of product must Feskin make and sell to break even? |

|  |  |
| --- | --- |
| Sales volume | units |

|  |  |
| --- | --- |
| **b.** | How many units of product must Feskin make and sell to earn a $56,000 profit? |

|  |  |
| --- | --- |
| Sales volume | units |

|  |  |
| --- | --- |
| **c.** | The marketing manager believes that sales would increase dramatically if the price were reduced to $34 per unit. How many units of product must Feskin make and sell to earn a $56,000 profit, if the sales price is set at $34 per unit? |

|  |  |
| --- | --- |
| Sales volume | units |

*Problem 3-23A Comprehensive CVP analysis [LO 2, 4, 6, 7, 8]*



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| 1. Borysko Company makes and sells products with variable costs of $47 each. Borysko incurs annual fixed costs of $22,400. The current sales price is $63. |

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| **Required:** |
| The following requirements are interdependent. For example, the $4,800 desired profit introduced in Part c also applies to subsequent parts. Likewise, the $55 sales price introduced in Part d applies to the subsequent parts. |

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| **a.** | Determine the contribution margin per unit. |

|  |  |
| --- | --- |
| Contribution margin per unit | $ |

|  |  |
| --- | --- |
| **b-1.** | Determine the break-even point in units and in dollars. |

|  |  |
| --- | --- |
|  | |
| Break-even point in units |  |
| Break-even point in dollars | $ |
|  | |

|  |  |
| --- | --- |
| **b-2.** | Prepare an income statement using the contribution margin format. **(Leave no cells blank - be certain to enter "0" wherever required.** |

|  |  |
| --- | --- |
| Borysko Company Income Statement | |
|  | $ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Net income | $ |
|  |  |
|  | |

|  |  |
| --- | --- |
| **c-1.** | Suppose that Borysko desires to earn a $4,800 profit. Determine the sales volume in units and dollars required to earn the desired profit. |

|  |  |
| --- | --- |
|  | |
| Sales volume in units |  |
| Sales volume in dollars | $ |
|  | |

|  |  |
| --- | --- |
| **c-2.** | Prepare an income statement using the contribution margin format. **(Amounts to be deducted** **and loss amounts should be indicated with a minus sign.)** |

|  |  |
| --- | --- |
| Borysko Company Income Statement | |
|  | $ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | $ |
|  |  |
|  | |

|  |  |
| --- | --- |
| **d-1.** | If the sales price drops to $55 per unit, what level of sales is required to earn the desired profit? Express your answer in units and dollars. |

|  |  |
| --- | --- |
|  | |
| Sales volume in units |  |
| Sales volume in dollars | $ |
|  | |

|  |  |
| --- | --- |
| **d-2** | Prepare an income statement using the contribution margin format. **(Amounts to be deducted** **and loss amounts should be indicated with a minus sign. )** |

|  |  |
| --- | --- |
| Borysko Company Income Statement | |
|  | $ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | $ |
|  |  |
|  | |

|  |  |
| --- | --- |
| **e-1.** | If fixed costs drop to $16,800, what level of sales is required to earn the desired profit? Express your answer in units and dollars. |

|  |  |
| --- | --- |
|  | |
| Sales volume in units |  |
| Sales volume in dollars | $ |
|  | |

|  |  |
| --- | --- |
| **e-2.** | Prepare an income statement using the contribution margin format. **(Amounts to be deducted** **and loss amounts should be indicated with a minus sign.** |

|  |  |
| --- | --- |
| Borysko Company Income Statement | |
|  | $ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | $ |
|  |  |
|  | |

|  |  |
| --- | --- |
| **f-1.** | If variable cost drops to $39 per unit, what level of sales is required to earn the desired profit? Express your answer in units and dollars. |

|  |  |
| --- | --- |
|  | |
| Sales volume in units |  |
| Sales volume in dollars | $ |
|  | |

|  |  |
| --- | --- |
| **f-2.** | Prepare an income statement using the contribution margin format. **(Amounts to be deducted** **and loss amounts should be indicated with a minus sign.** |

|  |  |
| --- | --- |
| Borysko Company Income Statement | |
|  | $ |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  | $ |
|  |  |
|  | |

|  |  |
| --- | --- |
| **g.** | Assume that Borysko concludes that it can sell 1,350 units of product for $55 each. Recall that variable costs are $39 each and fixed costs are $16,800. Compute the margin of safety in units and dollars and as a percentage. **(Round your answers to 1 decimal place.**) |

|  |  |
| --- | --- |
|  | |
| Margin of safety in units |  |
| Margin of safety in dollars | $ |
| Margin of safety | % |
|  | |