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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.  |

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

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

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

|  |
| --- |
| Borysko CompanyIncome Statement |
|    | $   |
|    |   |
|   |  |
|    |   |
|    |   |
|   |  |
|   Net income | $   |
|   |  |
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| **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. |

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|   |
|   Sales volume in units |   |
|   Sales volume in dollars | $   |
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| **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 CompanyIncome Statement |
|    | $   |
|    |   |
|   |  |
|    |   |
|    |   |
|   |  |
|    | $   |
|   |  |
|  |

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| **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.  |

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

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| **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 CompanyIncome 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.  |

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|   |
|   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 CompanyIncome Statement |
|    | $   |
|    |   |
|   |  |
|    |   |
|    |   |
|   |  |
|    | $   |
|   |  |
|  |

|  |  |
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| **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.  |

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

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| --- | --- |
| **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 CompanyIncome Statement |
|    | $   |
|    |   |
|   |  |
|    |   |
|    |   |
|   |  |
|    | $   |
|   |  |
|  |

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| **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.**) |

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