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| Vogel Co. produces three models of heating and air conditioning thermostat components. The following table summarizes data about each model: |

|  |  |  |  |
| --- | --- | --- | --- |
|   | BV19 | HV41 | MV12 |
|   Selling price per unit | $ | 36 | $ | 60 | $ | 30 |   |
|   Contribution margin per unit |   | 12 |   | 18 |   | 6 |   |
|   Units sold per month |   | 4,000 |   | 2,000 |   | 6,000 |   |
|   |  |  |  |  |  |  |  |
|   Total contribution margin | $ | 48,000 | $ | 36,000 | $ | 36,000 |   |
|   Direct fixed expenses |   | 21,600 |   | 17,100 |   | 24,300 |   |
|   |  |  |  |  |  |  |  |
|   Segment margin | $ | 26,400 | $ | 18,900 | $ | 11,700 |   |
|   Allocated company fixed expenses |   | 10,000 |   | 5,000 |   | 15,000 |   |
|   |  |  |  |  |  |  |  |
|   Operating income (loss) | $ | 16,400 | $ | 13,900 | $ | (3,300 | ) |
|   |  |  |  |  |  |  |  |
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| **Required:** |
| **(a)** | On what basis does the $30,000 of company fixed expenses appear to be allocated? |
|   |   |
|   |  |

|  |  |
| --- | --- |
| **(b)** | Calculate the effect on total company net income if the MV12 model were discontinued. **(Omit the  "$" sign in your response.)** |

|  |  |  |
| --- | --- | --- |
|   The net income would by | $ |   |

|  |  |
| --- | --- |
| **(c)** | Calculate the contribution margin ratio for each model. **(Round your answers to 1 decimal  place. Omit the "%" sign in your response.)** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | BV19 |   | HV41 |   | MV12 |   |
|   Contribution margin ratio |  | % |  | % |  | % |
|  |

|  |  |
| --- | --- |
| **(d)** | If an advertising campaign focusing on a single model were to result in an increase of 5,000 units in  the quantity of units sold, which model should be advertised? |
|   |   |
|   |  |

|  |  |
| --- | --- |
| **(e)** | If an advertising campaign focusing on a single model were to result in an increase of $15,000 in  revenues, which model should be advertised? |
|   |   |
|   |  |