21-104. Cona Classics manufactures coffee in a one-department process costing system. During the month of September, 275,000 units were started, completed and transferred to finished goods inventory. There were no units in work in process inventory at the beginning of the month but there were 42,000 units in process at the end of the month. These units were 40% complete as to direct materials and 75% complete as to conversion costs. Total costs incurred during September amounted to $1,021,300 for direct materials and $551,700 for conversion costs.

Required:

Compute the total costs of goods transferred to finished goods inventory and the total costs of ending work in process inventory.

Direct materials:

\[275,000 + (42,000 \times 40\%) = 291,800 \text{ units}\]
\[\frac{1,021,300}{291,800 \text{ units}} = \$3.50 \text{ per unit}\]

Conversion costs:

\[275,000 + (42,000 \times 75\%) = 306,500 \text{ units}\]
\[\frac{551,700}{306,500 \text{ units}} = \$1.80 \text{ per unit}\]

Completed units:

\[275,000 \times (\$3.50 + \$1.80) = \$1,457,500\]

Work in process inventory - ending:

\[42,000 \times 40\% \times \$3.50 = \$58,800\]
\[42,000 \times 75\% \times \$1.80 = \$56,700\]
Total \[\$115,500\]

22-105. Don Juan, Inc., which manufactures plastic swords, gathered the following financial information:

Variable expenses per unit \[\$4.30\]
Sale price per unit \[\$7.50\]
Total fixed expense \[\$61,500.00\]

Required:

Compute:

a. Unit contribution margin
b. Contribution margin ratio
c. Breakeven sales in units
d. Breakeven sales in dollars

Answer:

a. \[\$7.50 - \$4.30 = \$3.20\]
b. \[\frac{\$3.20}{\$7.50} = 0.4267\]
c. \[\frac{\$61,500}{\$3.20} = 19,219 \text{ units} \times \frac{\sqrt{14.14}}{14.14} = 144,129\]
d. \[\frac{\$61,500}{0.4267} = \$144,129 \text{ rounded}\]
22-108. Rider Company sells tricycles and gathered the following information:

Variable expenses per unit $35
Sales price per unit $82
Total fixed expenses $243,800

Required:

Compute:

a. Breakeven sales in units
b. Target sales in units assuming a target operating income of $75,000
c. Target sales in dollars assuming a target operating income of $135,000

Answer:

a. $243,800 / ($82 - $35) = 5,187 units
b. $243,800 + $75,000 = $318,800 / $47 = 6,783 units
c. $243,800 + $135,000 = $378,800 / $47 = 8,000 units

8,060 x $82 = $660,920

22-112. Ghord Company sells two models of its product, Model T and Model G. Model T sells for $8 and Model G sells for $6. Variable expenses are $4 for Model T and $3.20 for Model G. Ghord sells twice as many Model G's as Model T's. For the current year total fixed expenses are $28,800 and operating income is $9,600.

Required:

1. Compute the breakeven sales in units for Models T and G
2. Compute the breakeven sales in dollars for Models T and G

Answer:

1. $8 - $4 = $4
   $6 - $3.20 = $2.80 x 2 = $5.60
   $4 + $5.60 = $9.60
   $28,800 / $9.60 = 3,000 units of Model T
   3,000 x 2 = 6,000 units of Model G

2. $3,000 x $8 = $24,000
   $6,000 x $6 = $36,000
   Total $60,000

3. $28,800 + $9,600 = $38,400 / $9.60 = 4,000 units of Model T
   4,000 x 2 = 8,000 units of Model G
   8,000 x 1.10 = 4,400
   (4,400 x $4) + (8,000 x $2.80) - $28,800 = $13,440
Garland Company gathered the following information for the year ended December 31, 20X7:

Garland Company
Income Statement
Year Ended December 31, 20X7

Sales revenue $758,000
Cost of goods sold 455,000
Gross margin 303,000
Operating expenses:
  Marketing expenses 52,000
  Administrative expenses 73,000
Total operating expenses 125,000
Operating income 178,000

Total fixed manufacturing expenses amounted to $210,000. Marketing expenses were 25% variable and 75% fixed. Administrative expenses were 80% fixed and 20% variable. Assume units produced equaled units sold.

a) Prepare a contribution margin income statement.

Answer: a)

Garland Company
Contribution Margin Income Statement
Year Ended December 31, 20X7

Sales revenue $758,000
Variable expenses:
  Variable manufacturing cost of goods sold 245,000
  Marketing expenses 13,000
  Administrative expenses 14,600
Total variable expenses 272,600
Contribution margin 485,400
Fixed expenses:
  Manufacturing expenses 210,000
  Marketing expenses 39,000
  Administrative expenses 58,400
Total fixed expenses 307,400
Operating income 178,000

YOU ARE A WORLD WIDE COMPANY DOING BUSINESS IN CALIFORNIA. YOUR PAYROLL, PROPERTY AND SALES IN CALIFORNIA AMOUNTS TO $50 MILLION. YOUR WORLD WIDE TOTAL FOR THESE ITEMS IS $100 MILLION. YOUR WORLD WIDE INCOME IS $22 MILLION. HOW MUCH IS TAXED IN CALIFORNIA?
Sharp Image Company makes a part used in the manufacture of video cameras. Management is considering whether to continue manufacturing the part, or to buy the part from an outside source at a cost of $21.30 per part. Sharp Image needs 100,000 parts per year. The cost of manufacturing 100,000 parts is computed as follows:

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$765,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$612,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$510,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$663,000</td>
</tr>
<tr>
<td>Total manufacturing costs</td>
<td><strong>$2,550,000</strong></td>
</tr>
</tbody>
</table>

Sharp Image would pay $.30 per unit to transport the parts to its manufacturing plant. Purchasing the part from an outside source would enable the company to avoid 35% of fixed manufacturing overhead. Sharp Image's factory space freed up by purchasing the part from an outside supplier could be used to manufacture another product with a contribution margin of $59,000.

Prepare an analysis to show which alternative makes the best use of Sharp Image's factory space:
1) make the part
2) buy the part and leave facilities idle
3) buy the part and use facilities to make another product leave facilities idle

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Make</th>
<th>Buy part and facilities idle</th>
<th>Buy and use facilities to make another product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$765,000</td>
<td>$30,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$612,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$510,000</td>
<td>$30,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Variable transportation 304</td>
<td></td>
<td></td>
<td>$30,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$663,000</td>
<td>$430,950</td>
<td>$430,950</td>
</tr>
<tr>
<td>Purchase price 21.30</td>
<td></td>
<td>$2,130,000</td>
<td>$2,130,000</td>
</tr>
<tr>
<td>Profit contribution from another product</td>
<td>0</td>
<td>0</td>
<td>$(59,000)</td>
</tr>
<tr>
<td>Total cost</td>
<td>$2,550,000</td>
<td>$2,590,950</td>
<td>$2,531,950</td>
</tr>
</tbody>
</table>

Sharp Image should buy the part and use facilities to make another part.