

Answer on Question #57998 -Management - Other

Harris Corp. manufactures a single product. Costs for the year 2001 for output levels of 1000 and 2000 units are as follows:

Units Produced 1000 2000
Direct labor \$30,000 \$30,000
Direct materials \$20,000 \$40,000
Overhead:
Variable portion \$12,000 \$24,000
Fixed portion \$36,000 \$36,000
Selling & Administrative costs:
Variable portion \$5,000 \$10,000
Fixed portion \$22,000 \$22,000

At each level of output, compute the following:

- Total manufacturing costs
- Manufacturing costs per unit
- If sale price is \$92, determine the break-even-point in quantity and dollar values
- Determine the contribution margin in dollar and percentage ? Please show all the answers

Solution

A.

$$TC_{1000} = 30,000 + 20,000 + 12,000 + 36,000 + 5,000 + 22,000 \\ = \$125,000$$

$$TC_{2000} = 30,000 + 40,000 + 24,000 + 36,000 + 10,000 + 22,000 \\ = \$162,000$$

B.

$$ATC_{1000} = \frac{\$125,000}{1000} = \$125$$

$$ATC_{2000} = \frac{\$162,000}{2000} = \$81$$

C.

To determine the break-even-point we use the formula:

$$Q = \frac{FC}{P - AVC}$$

$$Q_{1000} = \frac{36,000 + 22,000}{92 - \frac{30,000 + 20,000 + 12,000 + 5,000}{1000}} = \frac{58,000}{92 - 67}$$

$$= 2320 \text{ units or } 2320 \times \$92 = \$213,440$$

$$Q_{2000} = \frac{36,000 + 22,000}{92 - (30,000 + 40,000 + 24,000 + 10,000)/2000} = \frac{58,000}{92 - 52}$$

$$= 1450 \text{ units or } 1450 \times \$92 = \$133,400$$

D. The contribution margin is calculated as:

$$MR = TR - VC$$

$$MR_{1000} = TR - VC = 92,000 - 67,000 = \$25,000 \text{ or } \frac{\$25,000}{92,000} * 100\% = 27,17\%$$

$$MR_{2000} = TR - VC = 184,000 - 104,000 = \$80,000 \text{ or } \frac{\$80,000}{184,000} * 100\% = 43,48\%$$

Answer

a. \$125,000; \$162,000

b. \$125; \$81

c. 2320 units or \$213,440; 1450 units or \$133,400

d. \$25,000 or 27,17%; \$80,000 or 43,48%