Managerial Accounting
Chapter 4 - Cost Volume-Profit
Answer key

1. a. Break even in Unit Sales = \( \frac{\text{Fixed Expenses}}{\text{Contribution Margin}} \)
Selling Price = 50
Less Variable cost = (30) \( \frac{\text{CM}}{\text{CM Ratio}} = \frac{20}{50} = 0.40 \)
380000 \( \frac{\text{CM}}{0.40} \)

b. Yes, this would effect the Operating Income positively since they sold more than Break even.
22000 - 19000 = 3000
3000 x $20 = 60000 (Profit)

2. Selling Price $50
Less=Variable Cost (30+4) \( \frac{\text{CM}}{\text{CM Ratio}} = \frac{16}{\text{Contribution Margin}} \)
- Break even in Units: \( \frac{380000}{16} = 23750 \text{ units} \)

Prepared by: Chawaniit Singh
d. **Break even in dollars:**

\[
\frac{16}{50} = 0.32
\]

\[
i.e. = \frac{380000}{0.32} = $1,187,500
\]

**Daves Shoes will be selling 39,000 units above break even.** \((22900 - 19000)\). There will be a positive impact on operating income.

\[
CM = 50 - (30 + 4) = $16
\]

\[
3900 \times $16 = 62400 \text{ (Operating Income)}
\]

e. **The margin of safety is the amount by which the company's sales exceed break even sales.**

\[
\text{Margin of safety} \% = \frac{\text{Margin of safety}}{\text{Total sales}}
\]

\[
\text{Margin of safety} = \text{Total sales} - \text{Break even sales}
\]

\[
= (22900 \times $50) - 950,000 = 195000
\]

\[
\text{MOS} \% = \frac{195000}{1,145,000} = 17.03\%
\]

f. **The degree of operating leverage measures the effect of a percentage change in sales on the company's operating income.** The higher the operating leverage, the more sensitive operating income will be to a change in sales.

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a. Sales \((20000 \times 120)\)  \(\$2,400,000\)

Less: Variable Expenses \((60 \times 20000)\)  \((1,200,000)\)

Contribution Margin  \(1,200,000\)

Less: Fixed Expenses: Operating Income:

Operating Income  \(600,000\)

Operating Leverage  \(= \frac{1,200,000}{600,000} = 2\)

Operating Leverage  \(= \frac{\text{Contribution Margin}}{\text{Operating Income}}\)