Problem 6-19 (60 minutes)

1.

Sales price	$20.00	100%
Variable expenses.....	8.00	40%
Contribution margin	$12.00	60%

2. $$\text{Dollar sales to break even} = \frac{\text{Fixed expenses}}{\text{CM ratio}}$$

$$= \frac{\$180{,}000}{0.60} = \$300{,}000$$

3. $75,000 increased sales × 0.60 CM ratio = $45,000 increased contribution margin. Because the fixed costs will not change, net operating income should also increase by $45,000.

4. a. $$\text{Degree of operating leverage} = \frac{\text{Contribution margin}}{\text{Net operating income}}$$

$$= \frac{\$240{,}000}{\$60{,}000} = 4$$

b. 4 × 20% = 80% increase in net operating income. In dollars, this increase would be 80% × $60,000 = $48,000.

5.

	Last Year: 18,000 units		*Proposed: 24,000 units**		
	Amount	*Per Unit*	*Amount*	*Per Unit*	
Sales	$360,000	$20.00	$432,000	$18.00	**
Variable expenses.....	144,000	8.00	192,000	8.00	
Contribution margin	216,000	$12.00	240,000	$10.00	
Fixed expenses.....	180,000		210,000		
Net operating income....	$ 36,000		$ 30,000		

*18,000 units + 6,000 units = 24,000 units

**$20.00 × 0.9 = $18.00

No, the changes should not be made.

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Problem 6-19 (continued)

6. Expected total contribution margin:

18,000 units × 1.25 × $11.00 per unit*	$247,500
Present total contribution margin:	
18,000 units × $12.00 per unit.....	216,000
Incremental contribution margin, and the amount by which advertising can be increased with net operating income remaining unchanged.....	$ 31,500

*$20.00 – ($8.00 + $1.00) = $11.00

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