

# Discussion



P22-3A

*Compute break-even point under alternative courses of action.*

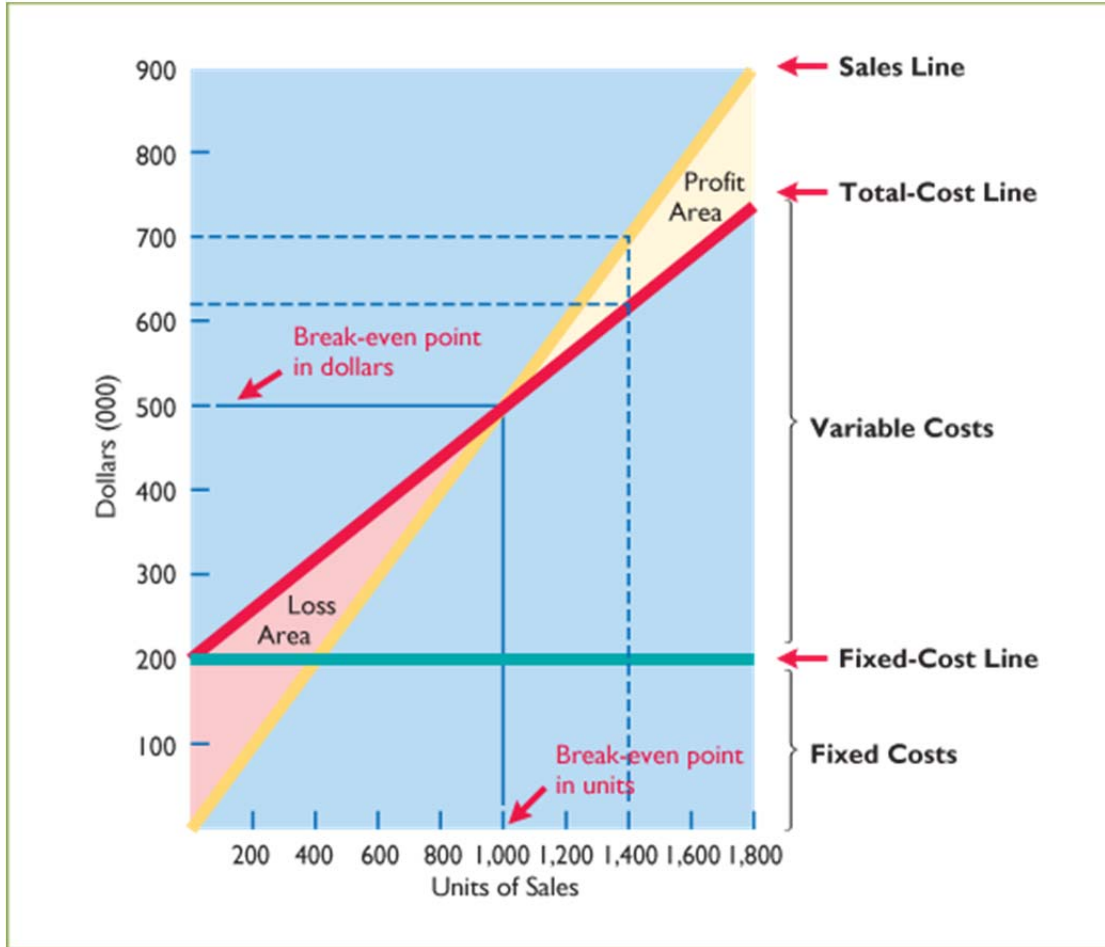
Magic Manufacturing's sales slumped badly in 2012. For the first time in its history, it operated at a loss. The company's income statement showed the following results from selling 600,000 units of product: Net sales \$2,400,000; total costs and expenses \$2,540,000; and net loss \$140,000. Costs and expenses consisted of the amounts shown below.

	Total	Variable	Fixed
Cost of goods sold	\$2,100,000	\$1,440,000	\$660,000
Selling expenses	240,000	72,000	168,000
Administrative expenses	200,000	48,000	152,000
	<u>\$2,540,000</u>	<u>\$1,560,000</u>	<u>\$980,000</u>

Management is considering the following independent alternatives for 2013.

1. Increase unit selling price 20% with no change in costs, expenses, and sales volume.
2. Change the compensation of salespersons from fixed annual salaries totaling \$150,000 to total salaries of \$60,000 plus a 3% commission on net sales.
3. Purchase new automated equipment that will change the proportion between variable and fixed cost of goods sold to 54% variable and 46% fixed.

Use the following illustration from the textbook as well as the “Do’it” example for help with Break-even analysis.



### Do it! Break-Even Analysis Example from textbook:

Lombardi Company has a unit selling price of \$400, variable costs per unit of \$240, and fixed costs of \$180,000. Compute the break-even point in units using (a) a mathematical equation and (b) contribution margin per unit.

#### action plan

- ✓ Apply the formula: Sales = Variable costs + Fixed costs + Net income.
- ✓ Apply the formula: Fixed costs ÷ Contribution margin per unit = Break-even point in units.

#### Solution

- a. The formula is  $\$400Q = \$240Q + \$180,000$ . The break-even point in units is 1,125 ( $\$180,000 \div \$160$ ).
- b. The contribution margin per unit is \$160 ( $\$400 - \$240$ ). The formula therefore is  $\$180,000 \div \$160$ , and the break-even point in units is 1,125.