

I-18.04

Great Grape Juice company is operating at full capacity. Annual revenues are \$50,000,000. Total costs are \$45,000,000, of which 40% is fixed and 60% is variable. In considering the following scenarios, assume each is independent of the others.

- (a) The company is considering expanding capacity. The additional capacity will add \$10,000,000 in annual fixed costs. The contribution margin rate will not be impacted. How much in additional sales will be necessary to justify the added capacity?
- (b) Assume a fungus has reduced grape production and increased total variable costs by an additional 10% of sales. Competitive pressures prevent Great Grape Juice from raising sales prices. Will the company remain profitable?
- (c) The company is considering automation of certain production processes. Productive capacity will not be increased, but the contribution margin ratio will increase by 5% of sales via a reduction in direct labor. The automated equipment will cost \$5,000,000 per year to operate. Should the equipment be purchased?
- (d) The company is considering increasing the sales price per unit by 10%. The fixed costs and variable per unit cost will not be affected, but total sales volume (in units) will be reduced by 10%. Will the company be more or less profitable if they engage this pricing strategy?