

10. Application problems

Multiple Choice Practice Problems

- 1 How many gallons of a 5% acid solution must be mixed with 28 gallons of a 10% solution to obtain a mixture that is 7% acid?
 - a. 143.5 gallons
 - b. 140.0 gallons
 - c. 39.66667 gallons
 - d. 98.0 gallons
 - e. 42.0 gallons

- 2 If you invest \$4000 in a stock, you obtain a \$500 dividend in one year. How much would you need to invest to earn a \$200 dividend?
 - a. \$1600.0
 - b. \$160.0
 - c. \$100.0
 - d. \$2500.0
 - e. \$10000.0

- 3 The length of a rectangle is 3 feet more than the width. The area of the rectangle is 10 square feet. Find the length of the rectangle.
 - a. 10
 - b. $\frac{10}{3}$
 - c. 2
 - d. 5
 - e. 3

- 4 The ABC company has determined that its cost of producing 60 units is \$8000, and that the cost of producing 40 units is \$1000. Express the linear relationship between the cost C and the number of units x .
 - a. $C(x) = 2.857143 \times 10^{-2}x + 7999.829$
 - b. $C(x) = 3500x - 29000$

- c. $C(x) = 350x - 13\,000$
- d. $C(x) = 29\,000 - 3500x$
- e. $C(x) = 3500x - 20\,000$

5 Write the formula that expresses the following variation: "y is directly proportional to x and y = 4 when x = -7"

- a. $y = 4x$
- b. $y = -\frac{4}{7}x$
- c. $x = -7y$
- d. $y = -\frac{7}{4}x$
- e. $y = -28x$