

10. Application problems

Practice Problems

- 1 How many gallons of a 4% acid solution must be mixed with 7 gallons of a 15% solution to obtain a mixture that is 11% acid? $\boxed{4 \text{ gallons}}$
- 2 If you invest \$7,500 in a stock, you obtain a \$135 dividend in one year. How much would you need to invest to earn a \$500 dividend? $\boxed{\$27,777.77}$
- 3 The length of a rectangle is 3 feet more than the twice the width. The area of the rectangle is 2 square feet. Find the length of the rectangle. $\boxed{L = 4}$
- 4 The ABC company has determined that its cost of producing 100 units is \$10,000, and that the cost of producing 80 units is \$2,000. Express the linear relationship between the cost C and the number of units x .
 $\boxed{C = 400x - 30,000}$
- 5 Write the formula that expresses the following variation: " y is directly proportional to x and $y = -10$ when $x = 5$ " $\boxed{y = -2x}$