3.8 Rewrite Equations and **Formulas**

Goal • Write equations in function form and rewrite formulas.

Your Notes

Example 1 Rewrite an equation in function form

Write 2x + 2y = 10 in function form.

Solution

Solve the equation for *y*.

$$2x + 2y = 10$$
 Write original equation.

$$2y =$$
 _____ Subtract ____ from each side.
 $y =$ _____ Divide each side by ____.

$$y =$$
 Divide each side by _____

The equation y =_____ is written in function form.

Example 2 Solve a literal equation

Solve a + by = c for a.

Solution

$$a + by = c$$
 Write original equation

Solution
$$a + by = c$$
 Write original equation. $a =$ Subtract ____ from each side.

The solution is $a = \underline{\hspace{1cm}}$.

Example 3

Solve and use a formula

The interest I on an investment of P dollars at an interest rate r for t years is given by the formula I = Prt.

- **a.** Solve the formula for the time *t*.
- **b.** Use the rewritten formula to find the time it takes to earn \$100 interest on \$1000 at a rate of 5.0%.

Solution

a. I = Prt

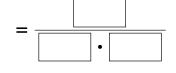
Write original formula.

Divide each side by ____.

b. Substitute _____ for *I*, _____ for *P*, and _____ for *r* in the rewritten formula.

$$t = \frac{I}{\Box}$$

Write rewritten formula.



Substitute.

Simplify.

It will take years to earn \$100 in interest.

Checkpoint Write the equation in function form.

1.
$$2x + y = 5$$

2.
$$3 + 3y = 9 - 6x$$

Checkpoint Complete the following exercises.

Homework

3. Solve a + by = c for b.

4. In Example 3, solve the equation for *P*. Find the investment P if I = \$400, r = 4%, and t = 4 years.