3.8 Rewrite Equations and Formulas

Goal • Write equations in function form and rewrite formulas.

Your Notes

VOCABULARY

Function form

Literal equation

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 ___.**

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.**

$a =$ _____ **Subtract _____ from each side.**

The solution is $a =$ _____.

Your Notes

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.**

$\frac{I}{\square} = t$ **Divide each side by ____.**

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

$t = \frac{I}{\square}$ **Write rewritten formula.**

$= \frac{\square}{\square \cdot \square}$ **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.