

## Lesson 3-5

### Example 1 Solve a Two-Step Equation

Solve  $4w - 3 = 17$ . Check your solution.

$$\begin{array}{r} 4w - 3 = 17 \\ + 3 = + 3 \\ \hline 4w = 20 \\ \frac{4w}{4} = \frac{20}{4} \\ w = 5 \end{array}$$

Write the equation.

Add 3 to each side.

Simplify.

Divide each side by 4.

Simplify.

**Check**  $4w - 3 = 17$

Write the original equation.

$$\begin{array}{r} 4(5) - 3 = 17 \\ 20 - 3 = 17 \\ 17 = 17 \checkmark \end{array}$$

Replace  $w$  with 5. Is this sentence true?

The solution is 5.

### Example 2 Solve a Two-Step Equation

Solve  $-3p + 6 = 15$ . Check your solution.

$$\begin{array}{r} -3p + 6 = 15 \\ - 6 = -6 \\ \hline -3p = 9 \\ \frac{-3p}{-3} = \frac{9}{-3} \\ p = -3 \end{array}$$

Write the equation.

Subtract 6 from each side.

Simplify.

Divide each side by  $-3$ .

Simplify.

**Check**  $-3p + 6 = 15$

Write the original equation.

$$\begin{array}{r} -3(-3) + 6 = 15 \\ 9 + 6 = 15 \\ 15 = 15 \checkmark \end{array}$$

Replace  $p$  with  $-3$ . Is this sentence true?

The solution is  $-3$ .

**Example 3 Solve a Two-Step Equation**  
**Solve  $-18 = 2 + 5g$ . Check your solution.**

$$\begin{array}{r} -18 = 2 + 5g \\ - 2 = -2 \\ \hline -20 = 5g \\ \frac{-20}{5} = \frac{5g}{5} \\ -4 = g \end{array}$$

Write the equation.

Subtract 2 from each side.

Simplify.

Divide each side by 5.

Simplify.

**Check**  $-18 = 2 + 5g$  Write the original equation.

$$\begin{array}{r} -18 = 2 + 5(-4) \\ -18 = -18 \checkmark \end{array}$$

Replace  $g$  with  $-4$ . Is this sentence true?

The solution is  $-4$ .

**Example 4 Solve a Two-Step Equation**  
**Solve  $22 = 4 + 3g$ . Check your solution.**

$$\begin{array}{r} 22 = 4 + 3g \\ - 4 = -4 \\ \hline 18 = 3g \\ \frac{18}{3} = \frac{3g}{3} \\ 6 = g \end{array}$$

Write the equation.

Subtract 4 from each side.

Simplify.

Divide each side by 3.

Simplify.

**Check**  $22 = 4 + 3g$  Write the original equation.

$$\begin{array}{r} 22 = 4 + 3(6) \\ 22 = 22 \checkmark \end{array}$$

Replace  $g$  with 6. Is this sentence true?

The solution is 6.

**Example 5 Use an Equation to Solve a Problem**

**GROCERY SHOPPING** Karli has \$12 to spend at the grocery store. She must buy 1 gallon of milk and some bags of snacks. The gallon of milk costs \$3. How many bags of snacks can she buy if each bag costs \$2.25?

Variable Let  $s$  = the number of bags of snacks.  
Words Cost of the milk plus cost of the snacks equals \$12.  
Equation  $3 + 2.25s = 12$

$$\begin{array}{r} 3 + 2.25s = 12 \\ - 3 = -3 \\ \hline \end{array}$$

Write the equation.  
Subtract 3 from each side.

$$\begin{aligned} 2.25s &= 9 \\ \frac{2.25s}{2.25} &= \frac{9}{2.25} \\ s &= 4 \end{aligned}$$

Simplify.

Divide each side by 2.25.

$$9 \div 2.25 = 4$$

Karli can buy 4 bags of snacks.