

NAME \_\_\_\_\_

**Module 3** Solving Linear Equations  
of One Variable**Lesson 3** Solving One-Step Linear Equationsguided  
notes**Lesson Objectives**

- Solve one-step equations using addition and subtraction.
- Solve one-step equations using multiplication and division.
- Check one-step equations using addition, subtraction, multiplication, and division.

Example:  $3b = 6.75$ 

$$\frac{3b}{3} = \frac{6.75}{3}$$

$$b = \underline{2.25}$$

Check:  $3b = 6.75$ 

$$3(\underline{2.25}) \stackrel{?}{=} 6.75$$

$$6.75 = 6.75 \checkmark$$

The solution is 2.25.

Suppose we have an equation in which some coefficient times a variable equals another number. To solve the equation, **divide** \_\_\_\_\_ both sides of the equation by that **coefficient** \_\_\_\_\_.

Division and multiplication are **inverse** \_\_\_\_\_ operations.

Division undoes the **multiplication** \_\_\_\_\_ operation.

$$\textcircled{1} \quad 5x = 65$$

$$\frac{5x}{5} = \frac{65}{5}$$

$$x = \underline{13}$$

Check:  $5x = 65$

$$\underline{5(13)} \stackrel{?}{=} \underline{65}$$

$$65 = 65 \checkmark$$

The solution is 13.

Example:  $\frac{g}{8} = 15$

$$8 \cdot \frac{g}{8} = 8 \cdot 15$$

$$g = \underline{120}$$

Check:  $\frac{g}{8} = 15$

$$\frac{120}{8} \stackrel{?}{=} \underline{15}$$

$$15 = 15 \checkmark$$

The solution is 120.

2

$$4 \cdot \frac{z}{4} = 4 \cdot 3$$

$$z = 12$$

Check:  $\frac{z}{4} = 3$

$$\frac{12}{4} \stackrel{?}{=} \underline{3}$$

$$3 = 3 \checkmark$$

The solution is 12.

To undo subtraction we use the inverse operation addition.

Example:  $m - 20 = 55$

$$m - 20 + 20 = 55 + 20$$

$$m = \underline{75}$$

Check:  $m - 20 = 55$

$$75 - 20 \stackrel{?}{=} \underline{55}$$

$$55 = 55 \checkmark$$

The solution is 75.

3

$$y - 5 = 12$$

$$y - 5 + \underline{5} = 12 + \underline{5}$$

$$y = \underline{17}$$

Check:  $y - 5 = 12$

$$17 - 5 \stackrel{?}{=} \underline{12}$$

$$\underline{12} = 12 \checkmark$$

The solution is 17.

Example:  $P + 75 = 120$

$$\underline{P + 75 - 75} = 120 - 75$$

$$\underline{P} = 45$$

Check:  $P + 75 = 120$

$$\underline{45 + 75} \stackrel{?}{=} \underline{120}$$

$$120 = 120 \checkmark$$

The solution is 45.

4

$$t + 7 = 9$$

$$t + 7 - 7 = \underline{9 - 7}$$

$$t = \underline{2}$$

Check:  $t + 7 = 9$

$$2 + 7 \stackrel{?}{=} 9$$

$$\underline{9} = \underline{9} \checkmark$$

The solution is 2.