

**2.6 Solving Equations: The Addition and Multiplication Properties****2.6 Objective A: Identify Solutions of Equations.**

Equations contain equal  $=$  signs. We **SOLVE** equations.

Expressions do not contain = signs. We **SIMPLIFY** expressions.

**Ex. 1.** Determine whether the given number is a solution of the given equation.

a. Is -8 a solution of  $-9f = 64 - f$ ?

makes true

$$-9(-8) = 64 - (-8)$$

Yes!

b. Is -5 a solution of  $x + 12 = 17$ ?

$$(-5) + 12 = 17$$

$$7 \neq 17$$

NO!

**2.6 Objective B: Use the Addition Property of Equality to Solve Equations.**

Addition Property of Equality

Let  $a$ ,  $b$ , and  $c$  represent numbers. Assume  $a = b$ ,

So  $a + c = b + c$  and  $a - c = b - c$

$$10 = 10$$

$$\underline{10 + 2} = \underline{10 + 2}$$

**Ex. 2.** Solve.

a.  $7 = y - 2$

$$\begin{array}{r} 7 = y - 2 \\ +2 \quad +2 \\ \hline 9 = y \end{array}$$

9 = y

$$7 = (9) - 2 \checkmark$$

b.  $-7 + 10 - 20 = x$

$$3 - 20 = x$$

-17 = x

c.  $d - 9 = -21$

$$\begin{array}{r} d - 9 = -21 \\ +9 \quad +9 \\ \hline d = -12 \end{array}$$

d = -12

$$(-12) - 9 = -21$$

$$-21 = -21 \checkmark$$

### 2.6 Objective C: Use the Multiplication Property of Equality to Solve Equations.

Multiplication Property of Equality

Let  $a$ ,  $b$ , and  $c$  represent numbers and  $c \neq 0$ . Assume  $a = b$ ,

So  $a \cdot c = b \cdot c$                       AND                       $\frac{a}{c} = \frac{b}{c}$

**Ex. 3.** Solve. Check each solution.

a.  $5x = 20$

$$\frac{5 \cdot x = 20}{5 \quad 5}$$

$$x = 4$$

$$5(4) = 20 \checkmark$$

b.  $-3z = 12$

$$z = -4$$

c.  $\frac{b}{7} = -2 \cdot 7$

$$b = -14$$

d.  $\frac{-4}{5} = \frac{0}{5}$

No Solution

Quiz 9/11

Group Review: pg. 149 # 8, 16, 20, 26