

Solving Two-Step Equations

Step 1: Use addition or subtraction to move the number on the same side of the variable.

Step 2: Use multiplication or division to move the number on the same side of the variable.

Step 3: Check your answer by substituting the solution into the original equation.

Directions: Solve each equation and check your solution.

$$1. \begin{array}{r} 2x + 3 = 11 \\ -3 \quad -3 \end{array}$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$\boxed{x = 4}$$

Check

$$\begin{array}{l} x = 4 \quad 2x + 3 = 11 \\ 2(4) + 3 = 11 \\ 8 + 3 = 11 \\ 11 = 11 \checkmark \end{array}$$

$$2. \begin{array}{r} -2 = 6y - 14 \\ +14 \quad +14 \end{array}$$

$$\frac{12}{6} = \frac{6y}{6}$$

$$2 = y$$

$$\boxed{y = 2}$$

$$\begin{array}{l} y = 2 \quad -2 = 6y - 14 \\ -2 = 6(2) - 14 \\ -2 = 12 - 14 \\ -2 = -2 \checkmark \end{array}$$

$$3. \begin{array}{r} 13 - 4m = 25 \\ -13 \quad -13 \end{array}$$

$$\frac{-4m}{-4} = \frac{12}{-4}$$

$$-m = -3$$

$$\boxed{m = -3}$$

$$\begin{array}{l} m = -3 \quad 13 - 4m = 25 \\ 13 - 4(-3) = 25 \\ 13 + 12 = 25 \\ 25 = 25 \checkmark \end{array}$$

$$4. \begin{array}{r} -6 - x = -18 \\ -6 - x = -18 \\ +6 \quad +6 \end{array}$$

$$\frac{-x}{-1} = \frac{-12}{-1}$$

$$x = 12$$

$$\boxed{x = 12}$$

$$\begin{array}{l} x = 12 \quad -6 - x = -18 \\ -6 - 12 = -18 \\ -18 = -18 \checkmark \end{array}$$

$$5. \quad \frac{x}{12} + 7 = -3$$

$$\frac{x}{12} - 7 = -3 \quad -3 + 7 = -10$$

$$12 \cdot \frac{x}{12} = -10 \cdot 12$$

$$\boxed{x = -120}$$

$$x = -120 \quad \frac{x}{12} + 7 = -3$$

$$\frac{-120}{12} + 7 = -3$$

$$-10 + 7 = -3$$

$$-3 = -3 \checkmark$$

$$6. \quad 6 - \frac{t}{6} = 12$$

$$+6 + \frac{t}{6} = 12$$

$$-6 \quad -6 \quad -6$$

$$-6 \cdot \frac{t}{6} = 6 \cdot -6$$

$$\boxed{t = -36}$$

$$t = -36 \quad 6 - \frac{t}{6} = 12$$

$$6 - \frac{(-36)}{6} = 12$$

$$6 + (+6) = 12$$

$$12 = 12 \checkmark$$