

Practice (6.2B)

1. Draw balance scales and blocks to represent each equation. Solve.

$$\begin{array}{r} 2x + 5 = 9 \\ -5 \quad -5 \\ \hline 2x = 4 \\ \boxed{x = 2} \end{array}$$

$$\begin{array}{r} 11 = 3x + 2 \\ -2 \quad -2 \\ \hline 9 = 3x \\ \boxed{3 = x} \end{array}$$

$$\begin{array}{r} 4x + 1 = 5 \\ -1 \quad -1 \\ \hline 4x = 4 \\ \boxed{x = 1} \end{array}$$

$$\begin{array}{r} x + 7 = 10 \\ -7 \quad -7 \\ \hline x = 3 \end{array}$$

2. ~~Draw algebra tiles to model each equation.~~ Solve.

$$\begin{array}{r} 3x - 2 = 7 \\ +2 \quad +2 \\ \hline 3x = 9 \\ \boxed{x = 3} \end{array}$$

$$\begin{array}{r} -2x + 3 = -5 \\ -3 \quad -3 \\ \hline -2x = -8 \\ \boxed{x = 4} \end{array}$$

$$\begin{array}{r} 4x + 1 = -3 \\ -1 \quad -1 \\ \hline 4x = -4 \\ \boxed{x = -1} \end{array}$$

$$\begin{array}{r} 12 = 5x + 2 \\ -2 \quad -2 \\ \hline 10 = 5x \\ \boxed{2 = x} \end{array}$$

3. Solve each equation. Check your answer.

$$\begin{array}{r} 23 = 5t + 3 \\ -3 \quad -3 \\ \hline 20 = 5t \\ \boxed{4 = t} \end{array}$$

$$\begin{array}{r} -2f - 3 = 11 \\ +3 \quad +3 \\ \hline -2f = 14 \\ \boxed{f = -7} \end{array}$$

$$\begin{array}{r} 3w + 20 = -7 \\ -20 \quad -20 \\ \hline 3w = -27 \\ \boxed{w = -9} \end{array}$$

$$\begin{array}{r} -10 = 2q - 12 \\ +12 \quad +12 \\ \hline 2 = 2q \\ \boxed{1 = q} \end{array}$$

4. Show whether $x = 6$ is the solution to each equation.

$$\begin{array}{r} 4x + 10 = 34 \\ -10 \quad -10 \\ \hline 4x = 24 \\ \boxed{x = 6} \end{array}$$

$$\begin{array}{r} -15 = 3 - 3x \\ -3 \quad -3 \\ \hline -18 = -3x \\ \boxed{6 = x} \end{array}$$

$$\begin{array}{r} -10 + 3x = 28 \\ +10 \quad +10 \\ \hline 3x = 38 \\ \boxed{x = 12\frac{2}{3}} \end{array}$$

$$\begin{array}{r} -5x - 12 = -42 \\ +12 \quad +12 \\ \hline -5x = -30 \\ \boxed{x = 6} \end{array}$$

5. In a recent football game, the Spartans scored 47 points. This total included four field goals, worth three points each. The rest were converted touchdowns, worth seven points each. Write and solve an equation to find out how many converted touchdowns the Spartans scored.

$$\begin{array}{r} 7x + 12 = 47 \\ -12 \quad -12 \\ \hline 7x = 35 \\ \boxed{x = 5} \end{array}$$

The Spartans scored 5 touchdowns.