Some equations have more than one operation. You may need to combine two or more solutions to find the value of the variable.

**EXAMPLE 1**

$3x - 7 = 5$

To solve for $x$, you can proceed in two ways.

**Method 1**

**Step 1** Multiply each side by $\frac{1}{3}$.

$$\frac{1}{3}(3x - 7) = \frac{1}{3}(5)$$

$$\frac{3}{3}x - \frac{7}{3} = \frac{5}{3}$$

**Step 2** Add $\frac{7}{3}$ to each side.

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

$$x = \frac{12}{3} = 4$$

$$x = 4$$

**Method 2**

**Step 1** Add 7 to each side.

$$3x - 7 = 5$$
$$+ 7 = + 7$$
$$3x = 12$$

**Step 2** Divide each side by 3. $\frac{3}{3}x = \frac{12}{3}$

$$x = 4$$

**Step 3** Check. $3(4) - 7 = 5$

You might try performing some steps mentally.

$2c = 18$      Think: 2 times what number is 18? $c = 9$

$4e + 1 = 21$    Think: Subtract 1 from each side.
                4 times what number is 20? $e = 5$

To solve equations with more than one operation, you should always complete one operation before beginning the other.

**EXAMPLE 2**

$-3k - 6 = -27$

**Step 1** Add 6 to each side.

$$-3k - 6 = -27$$
$$+ 6 = + 6$$
$$-3k = -21$$

**Step 2** Divide each side by $-3$. $\frac{-3k}{-3} = \frac{-21}{-3}$

$$k = 7$$

**Step 3** Check. $-3(7) - 6 = -27$

**EXAMPLE 3** $\frac{3}{4}p + 12 = 0$

**Step 1** Subtract 12 from each side.

$$\frac{3}{4}p + 12 = 0$$
$$\underline{\quad -12 = -12}$$
$$\frac{3}{4}p = -12$$

**Step 2** Multiply each side by $\frac{4}{3}$, the reciprocal of $\frac{3}{4}$.

$$\left(\frac{4}{3}\right)\frac{3}{4}p = -\frac{12}{1}\left(\frac{4}{3}\right)$$
$$p = -\frac{48}{3} \text{ or } -16$$

**Step 3** Check.

$$\frac{3}{4}(-16) + 12 = 0$$