

# Two-Step Equations

Balance both sides of the equation by using inverse operations to get the variable alone and find its value.

**example:**  $8x + 3 = 35$   
 $\quad\quad -3 \quad -3$

$$\frac{8x}{8} = \frac{32}{8}$$

$$x = 4$$

$$7 + \frac{y}{2} = 17$$

$$-7 \quad -7$$

$$(2) \frac{y}{2} = 10 \quad (2)$$

$$y = 20$$

\* Be sure to make the same change to **both** sides of the equal sign.

Solve each equation to find the value of the variable.

①  $7a + 2 = 51$

\_\_\_\_\_

②  $\frac{k}{3} + 9 = 16$

\_\_\_\_\_

③  $8z - 7 = 33$

\_\_\_\_\_

④  $\frac{d}{6} - 3 = 7$

\_\_\_\_\_

⑤  $39 - 6e = 3$

\_\_\_\_\_

⑥  $\frac{c}{8} + 19 = 23$

\_\_\_\_\_

Name: \_\_\_\_\_

Basic

## Two-Step Equations

⑦  $5y - 13 = 52$

\_\_\_\_\_

⑧  $\frac{m}{3} + 8 = 20$

\_\_\_\_\_

⑨  $4d + 4 = 40$

\_\_\_\_\_

⑩  $\frac{n}{4} + 38 = 49$

\_\_\_\_\_

⑪  $7f - 8 = 13$

\_\_\_\_\_

⑫  $9 - \frac{k}{6} = 7$

\_\_\_\_\_

⑬  $3j + 9 = 51$

\_\_\_\_\_

⑭  $\frac{w}{8} - 5 = 4$

\_\_\_\_\_

⑮  $9v + 3 = 39$

\_\_\_\_\_

## Two-Step Equations

$$\begin{aligned} \textcircled{1} \quad 7a + 2 &= 51 \\ -2 \quad -2 \\ \hline 7a &= 49 \\ \frac{7a}{7} &= \frac{49}{7} \end{aligned}$$

$$\mathbf{a = 7}$$

$$\begin{aligned} \textcircled{2} \quad \frac{k}{3} + 9 &= 16 \\ -9 \quad -9 \\ \hline (3) \frac{k}{3} &= 7(3) \end{aligned}$$

$$\mathbf{k = 21}$$

$$\begin{aligned} \textcircled{3} \quad 8z - 7 &= 33 \\ +7 \quad +7 \\ \hline 8z &= 40 \\ \frac{8z}{8} &= \frac{40}{8} \end{aligned}$$

$$\mathbf{z = 5}$$

$$\begin{aligned} \textcircled{4} \quad \frac{d}{6} - 3 &= 7 \\ +3 \quad +3 \\ \hline (6) \frac{d}{6} &= 10(6) \end{aligned}$$

$$\mathbf{d = 60}$$

$$\begin{aligned} \textcircled{5} \quad 39 - 6e &= 3 \\ -39 \quad -39 \\ \hline -6e &= -36 \\ \frac{-6e}{-6} &= \frac{-36}{-6} \end{aligned}$$

$$\mathbf{e = 6}$$

$$\begin{aligned} \textcircled{6} \quad \frac{c}{8} + 19 &= 23 \\ -19 \quad -19 \\ \hline (8) \frac{c}{8} &= 4(8) \end{aligned}$$

$$\mathbf{c = 32}$$

$$\begin{aligned} \textcircled{7} \quad 5y - 13 &= 52 \\ +13 \quad +13 \\ \hline 5y &= 65 \\ \frac{5y}{5} &= \frac{65}{5} \end{aligned}$$

$$\mathbf{y = 13}$$

$$\begin{aligned} \textcircled{8} \quad \frac{m}{3} + 8 &= 20 \\ -8 \quad -8 \\ \hline (3) \frac{m}{3} &= 12(3) \end{aligned}$$

$$\mathbf{m = 36}$$

$$\begin{aligned} \textcircled{9} \quad 4d + 4 &= 40 \\ -4 \quad -4 \\ \hline 4d &= 36 \\ \frac{4d}{4} &= \frac{36}{4} \end{aligned}$$

$$\mathbf{d = 9}$$

$$\begin{aligned} \textcircled{10} \quad \frac{n}{4} + 38 &= 49 \\ -38 \quad -38 \\ \hline (4) \frac{n}{4} &= 11(4) \end{aligned}$$

$$\mathbf{n = 44}$$

$$\begin{aligned} \textcircled{11} \quad 7f - 8 &= 13 \\ +8 \quad +8 \\ \hline 7f &= 21 \\ \frac{7f}{7} &= \frac{21}{7} \end{aligned}$$

$$\mathbf{f = 3}$$

$$\begin{aligned} \textcircled{12} \quad 9 - \frac{k}{6} &= 7 \\ -9 \quad -9 \\ \hline (-6) - \frac{k}{6} &= -2(-6) \end{aligned}$$

$$\mathbf{k = 12}$$

$$\begin{aligned} \textcircled{13} \quad 3j + 9 &= 51 \\ -9 \quad -9 \\ \hline 3j &= 42 \\ \frac{3j}{3} &= \frac{42}{3} \end{aligned}$$

$$\mathbf{j = 14}$$

$$\begin{aligned} \textcircled{14} \quad \frac{w}{8} - 5 &= 4 \\ +5 \quad +5 \\ \hline (8) \frac{w}{8} &= 9(8) \end{aligned}$$

$$\mathbf{w = 72}$$

$$\begin{aligned} \textcircled{15} \quad 9v + 3 &= 39 \\ -3 \quad -3 \\ \hline 9v &= 36 \\ \frac{9v}{9} &= \frac{36}{9} \end{aligned}$$

$$\mathbf{v = 4}$$