

6.8 Solving Equations in More Than One Step

Practice

1. Solve and check.

key

Example: Solve $4b + 2 = 10$.

Step ①: $4b + 2 = 10$

Step ②: $4b + 2 - 2 = 10 - 2$ **OR** $4b + 2 = 10$
 $4b = 8$

Step ③: $4b = 8$
 $\frac{4b}{4} = \frac{8}{4}$ $\frac{4b}{4} = 8$

Step ④: $b = 2$ $b = 2$

a) $2x + 1 = 5$

$2x + 1 = 5$
 $2x + 1 - 1 = 5 - 1$
 $2x = 4$
 $\frac{2x}{2} = \frac{4}{2}$
 $x = 2$

Add -1 to both sides.

Divide both sides by 2.

$x = 2$

$2x + 1 = 5$
 $-1 = -1$
 $2x = 4$
 $\frac{2x}{2} = \frac{4}{2}$
 $x = 2$

CHECK:
 L.S. = $2x + 1$ R.S. = 5
 $= 2 \times 2 + 1$
 $= 4 + 1$
 $= 5$ ✓

b) $3y + 2 = 11$

$y = 3$

Add to both sides.

Divide both sides by .

CHECK:
 L.S. = $3y + 2$ R.S. = 11

c) $2e + 4 = 8$

$e = 2$

CHECK:

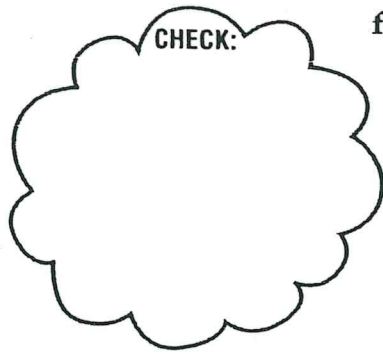
d) $7z + 1 = 15$

$z = 2$

CHECK:

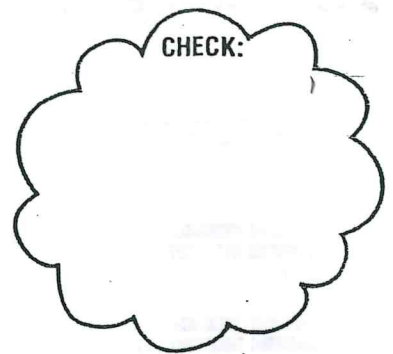
e) $4t + 1 = 13$

$t = 3$



f) $4b + 2 = 10$

$b = 2$



2. Solve and check.

a) $2x - 4 = 2$

$x = 3$

Add 4 to both sides.

Divide both sides by 2.

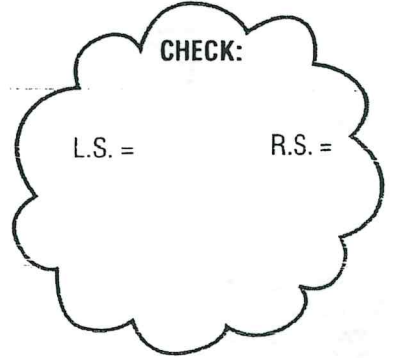
$2x - 4 = 2$

$+ \square = + \square$

$2x = \underline{\quad}$

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

$x = \underline{\quad}$



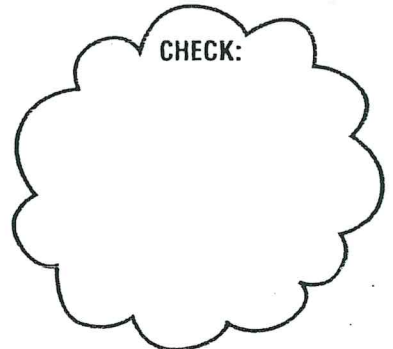
b) $4n - 3 = 5$

$n = 2$



c) $3s - 6 = 6$

$s = 4$



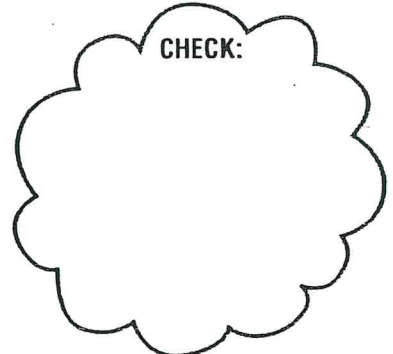
d) $6r - 2 = 10$

$r = 2$



e) $3y - 2 = 1$

$y = 1$



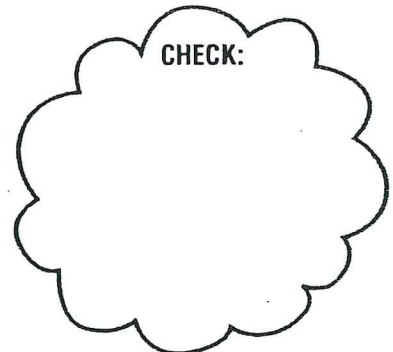
f) $2b - 9 = 1$

$b = 5$



g) $4z - 5 = 3$

$z = 2$



and check.

Example: Solve $\frac{x}{2} + 8 = 15$.

Add -8 to both sides.

$$\frac{x}{2} + 8 = 15$$

$$\frac{x}{2} = 7$$

$$\frac{x}{2} = 7$$

Multiply both sides by 2.

$$2 \times \frac{x}{2} = 2 \times 7$$

$$x = 14$$

CHECK:

$$\text{L.S.} = \frac{x}{2} + 8 \quad \text{R.S.} = 15$$

$$= \frac{14}{2} + 8$$

$$= 15$$



a) $\frac{x}{2} + 3 = 4$

Add -3 to both sides.

$$x = 2$$

$$\frac{x}{2} + 3 = 4$$

$$\frac{x}{2} = 1$$

$$\frac{x}{2} = 1$$

Multiply both sides by 2.

$$2 \times \frac{x}{2} = 2 \times 1$$

$$x = 2$$

CHECK:

$$\text{L.S.} = \frac{x}{2} + 3 \quad \text{R.S.} = \square$$

b) $\frac{z}{2} + 4 = 6$

$$z = 4$$

CHECK:

c) $\frac{x}{4} + 2 = 3$

$$x = 4$$

CHECK:

d) $\frac{n}{3} - 1 = 1$

$$n = 6$$

Add 1 to both sides.

$$\frac{n}{3} - 1 = 1$$

$$\frac{n}{3} = 2$$

$$\frac{n}{3} = 2$$

Multiply both sides by 3.

$$\square \times \frac{n}{3} = 2 \times 3$$

$$n = 6$$

CHECK: