

Practice: Two-Step Equations

Solve each equation and check your solution. Some problems I want you to explain your steps!

a. $5x + 1 = 26$

Work $-1 -1$

$$\begin{array}{r} 5x = 25 \\ \underline{5 \quad 5} \\ x = 5 \end{array}$$

Explain the Steps

Minus 1

Divide 5

$$\begin{array}{l} 5(5) + 1 = 26 \\ 25 + 1 = 26 \checkmark \end{array}$$

b. $5(x + 1) = 25$

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

c. $-5x + 1 = 26$

 $-1 -1$

$$\begin{array}{r} -5x = 25 \\ \underline{-5 \quad -5} \\ x = -5 \end{array}$$

d. $-5(x + 1) = 25$

Work $-5 \quad -5$ Explain the Steps

$$\begin{array}{r} x + 1 = -5 \\ \underline{-1 -1} \\ x = -6 \end{array}$$

Divide -5
Minus 1

e. $\frac{1}{5}(5x + 10) = 77 \cdot 5$

$$5x + 10 = 385$$

 $-10 \quad -10$

$$5x = 375$$

 $\underline{5 \quad 5}$

$$x = 75$$

f. $6\left(\frac{3(x+1)}{6} = 7\right) \cdot 6$

$$\begin{array}{r} 3(x+1) = 42 \\ \underline{3 \quad 3} \end{array}$$

$$x + 1 = 14$$

$$\underline{-1 \quad -1} \\ x = 13$$

<p>g. $-(x-3) = 7$</p> $\begin{array}{r} -1 \quad -1 \\ x-3 = -7 \\ +3 \quad +3 \\ \hline x = -4 \end{array}$	<p>h. $4\left(\frac{c}{8} + 3\right) = 7$</p> <p>Work $\frac{4}{4} \quad \frac{4}{4}$ Explain the Steps</p> <p>Divide 4 Times 8 -24</p> $\begin{array}{r} 8 \cdot \left(\frac{c}{8} + 3 = \frac{7}{4}\right) \cdot 8 \\ c + 24 = 14 \\ -24 \quad -24 \\ \hline c = -10 \end{array}$
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<p>1. $3x + 16 = 25$</p> $\begin{array}{r} -16 \quad -16 \\ 3x = 9 \\ \frac{3}{3} \quad \frac{3}{3} \\ \hline x = 3 \end{array}$	<p>2. $2n - 9 = 17$</p> $\begin{array}{r} +9 \quad +9 \\ 2n = 26 \\ \frac{2}{2} \quad \frac{2}{2} \\ \hline n = 13 \end{array}$
<p>3. $-31 = 13w + 8$</p> $\begin{array}{r} -8 \quad -8 \\ -39 = 13w \\ \frac{13}{13} \quad \frac{13}{13} \\ \hline -3 = w \end{array}$	<p>4. $\frac{y}{5} + 5 = -13$</p> $\begin{array}{r} -5 \quad -5 \\ 5 \cdot \left(\frac{y}{5} = -18\right) \cdot 5 \\ \hline y = -90 \end{array}$
<p>5. $\frac{c}{2} - 2.4 = 1.8$</p> $\begin{array}{r} +2.4 \quad +2.4 \\ 2 \cdot \left(\frac{c}{2} = 4.2\right) \cdot 2 \\ \hline c = 8.4 \end{array}$	<p>6. $3(m-1) = 33$</p> $\begin{array}{r} \frac{3}{3} \quad \frac{3}{3} \\ m-1 = 11 \\ +1 \quad +1 \\ \hline m = 12 \end{array}$
<p>7. $105 - 5b = 45$</p> $\begin{array}{r} -105 \quad -105 \\ -5b = -60 \\ \frac{-5}{-5} \quad \frac{-5}{-5} \\ \hline b = 12 \end{array}$	<p>8. $-9x - (-18) = -54$</p> $\begin{array}{r} -9x + 18 = -54 \\ -18 \quad -18 \\ \hline -9x = -72 \\ \frac{-9}{-9} \quad \frac{-72}{-9} \\ \hline x = 8 \end{array}$

<p>9. $\left(\frac{35}{x} = 5\right) \cdot x$</p> $\frac{35}{5} = \frac{5x}{5}$ $7 = x$	<p>10. $\left(\frac{12x}{-2} = 72\right) \cdot -2$</p> $\frac{12x}{12} = \frac{-144}{12}$ $x = -12$
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Check solutions! (1-10)

$$1) \quad 3(43) + 16 = 25$$

$$9 + 16 = 25$$

$$3) \quad -31 = 13(-3) + 8$$

$$-31 = -39 + 8$$

$$5) \quad \frac{8.4}{2} - 2.4 = 1.8$$

$$4.2 - 2.4 = 1.8$$

$$7) \quad 105 - 5(12) = 45$$

$$105 - 60 = 45$$

$$9) \quad \frac{35}{7} = 5$$

$$2) \quad 2(13) - 9 = 17$$

$$26 - 9 = 17$$

$$4) \quad \frac{-90}{5} + 5 = -13$$

$$-18 + 5 = -13$$

$$6) \quad 3(12-1) = 33$$

$$3(11) = 33$$

$$8) \quad -9(8) - (-18) = -54$$

$$-72 + 18 = -54$$

$$10) \quad \frac{12(-12)}{-2} = 72$$

$$12 \cdot 6 = 72$$

Practice Distributive Property & Solving:

7) $6 = -3(x + 2)$

$$6 = -3x - 6$$

$$+6 \quad +6$$

$$12 = -3x$$

$$\underline{-3} \quad \underline{-3}$$

$$\boxed{-4 = x}$$

8) $-3(4r - 8) = -36$

9) $24 = 6(-x - 3)$

10) $75 = 3(-6n - 5)$

11) $-3(1 + 6r) = 14 - r$

$$-3 - 18r = 14 - r$$

$$+r \quad +r$$

$$-3 - 17r = 14$$

$$+3 \quad +3$$

$$\underline{-17} \quad \underline{-17}$$

$$\boxed{r = -1}$$

12) $6(6v + 6) - 5 = 1 + 6v$

13) $-4k + 2(5k - 6) = -3k - 39$

14) $-16 + 5n = -7(-6 + 8n) + 3$

15) $10p + 9 - 11 - p = -2(2p + 4) - 3(2p - 2)$

16) $-10n + 3(8 + 8n) = -6(n - 4)$

17) $10(x + 3) - (-9x - 4) = x - 5 + 3$

18) $12(2k + 11) = 12(2k + 12)$

