

5.2 Two Step Equations

PRACTICE

Directions: Circle all the operations that are being performed on the variable. Indicate the number performing each operation.

1) $12.5 = 2.3x - 8.7$

- Grouping
- Exponents
- Multiply $\times 2.3$
- Divide
- Add
- Subtract 8.7

2) $\frac{x}{3} + 5 = 10$

- Grouping
- Exponents
- Multiply
- Divide 3
- Add 5
- Subtract

3) $17 - x = 15$

- Grouping
- Exponents
- Multiply -1
- Divide
- Add 17
- Subtract

Directions: Solve and check.

4) $-13.61 = \frac{b}{3.4} - 9.11$

$$\begin{array}{r} +9.11 \quad +9.11 \\ \hline -13.61 + 9.11 = \frac{b}{3.4} - 9.11 + 9.11 \\ -4.5 = \frac{b}{3.4} \end{array}$$

$$\begin{array}{r} 3.4(-4.5) = \frac{b}{3.4}(3.4) \\ \hline -15.3 = b \end{array}$$

$-15.3 = b$

5) $6x - 14 = -2$

$$\begin{array}{r} +14 \quad +14 \\ \hline 6x - 14 + 14 = -2 + 14 \\ 6x = 12 \\ \hline \frac{6x}{6} = \frac{12}{6} \\ x = 2 \end{array}$$

$x = 2$

6) $-2 = 5 - \frac{m}{3}$

$$\begin{array}{r} -5 \quad -5 \\ \hline -2 - 5 = 5 - \frac{m}{3} - 5 \\ -7 = -\frac{m}{3} \\ \hline 3(-7) = -\frac{m}{3}(-3) \\ -21 = -m \\ \hline 21 = m \end{array}$$

$21 = m$

7) $-13.27 = -2.2 - 4.1h$

$$\begin{array}{r} +2.2 \quad +2.2 \\ \hline -13.27 + 2.2 = -2.2 - 4.1h + 2.2 \\ -11.07 = -4.1h \\ \hline \frac{-11.07}{-4.1} = \frac{-4.1h}{-4.1} \\ 2.7 = h \end{array}$$

$2.7 = h$

8) $10 - 8x = 18$

$$\begin{array}{r} -10 \quad -10 \\ \hline 10 - 8x = 18 \\ -10 - 8x = 18 - 10 \\ -8x = 8 \\ \hline \frac{-8x}{-8} = \frac{8}{-8} \\ x = -1 \end{array}$$

$x = -1$

9) $\frac{k}{2} + 12 = 7$

$$\begin{array}{r} -12 \quad -12 \\ \hline \frac{k}{2} + 12 = 7 \\ \frac{k}{2} + 12 - 12 = 7 - 12 \\ \frac{k}{2} = -5 \\ \hline 2\left(\frac{k}{2}\right) = (-5)2 \\ k = -10 \end{array}$$

$k = -10$

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<p>10) $5 - v = -12$</p> $\begin{array}{r} -5 \quad -5 \\ \hline -v = -17 \\ \hline \frac{-v}{-1} = \frac{-17}{-1} \\ \hline v = 17 \end{array}$	<p>11) $7f + 8 = -13$</p> $\begin{array}{r} -8 \quad -8 \\ \hline 7f = -21 \\ \hline \frac{7f}{7} = \frac{-21}{7} \\ \hline f = -3 \end{array}$	<p>12) $9 = 12 - \frac{g}{4}$</p> $\begin{array}{r} -12 \quad -12 \\ \hline -4(-3) = \frac{-g}{4}(-4) \\ \hline 12 = 9 \end{array}$
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Directions: Sully solved the following. Check his solution to see if it is correct. If incorrect, find the correct solution.

<p>13) Sully says $n = 8$.</p> $4 + \frac{n}{4} = 2$ $4 + \frac{8}{4} = 2$ $4 + 2 = 2$ <p style="text-align: center;">6 = 2 X</p>	<p>14) Sully says $n = -3$.</p> $-8 = -2 + 2n$ $-8 = -2 + 2(-3)$ $-8 = -2 + -6$ $-8 = -8 \checkmark$
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Directions: Brust solved the following equations. He DEFINITELY made some mistakes! Using complete sentences explain his mistake and then find the correct solution.

<p>15)</p> $\begin{array}{r} 8 - 2x = -10 \\ -8 \quad = -8 \\ \hline -2x = -18 \\ \hline -2 = -2 \\ \hline x = 9 \end{array}$ <p>FORGOT (-)</p> <p style="text-align: center;"><u>x = 9</u></p> <p>Mr. Brust forgot to bring down the negative sign. He would then divide by -2.</p>	<p>16)</p> <p>Mr. Brust subtracted 5 when he should have divided by 5.</p> $\begin{array}{r} 5x - 3 = 12 \\ +3 = +3 \\ \hline 5x = 15 \\ \hline -5 = -5 \\ \hline x = 10 \end{array}$ <p style="text-align: center;">$5x = 15$ $\frac{5x}{5} = \frac{15}{5}$ <u>x = 3</u></p>
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