

Name: _____ Date: _____ Period: _____

Assignment: One-Step Equations

Look at the equation: $x + 5 = 10$

- Our goal is to identify the value of _____.
- We will always do this by _____ the variable by moving information across the _____.
- Remember!!! Your equation must remain _____.

Lets think about movement. Explain what needs to happen to isolate the variable for each example below.

<p>When you are trying to get rid of a <u>positive number or addition</u></p> $x + 2 = 9$	<p>When you are trying to get rid of a <u>negative number or Subtraction</u></p> $Z - 4 = 20$	<p>When you are trying to turn <u>something positive</u></p> $-V = 10$
<p>When you are trying to get rid of <u>division</u></p> $\frac{x}{5} = 10$	<p>When you are trying to get rid of <u>multiplication</u></p> $5w = 25$	<p>When you are trying to get rid of <u>a Fraction</u></p> $\frac{1}{2}x = 3$

How many steps did it take us to isolate each of the variables above?

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Assignment: One-Step Equations

Look at the equation: $x + 5 = 10$

- Our goal is to identify the value of "VARIABLE" (x, y, z, ...)
- We will always do this by isolating the variable by moving information across the equals sign.
- Remember!!! Your equation must remain balanced or equal
THIS IS DONE BY PERFORMING OPPOSITE OPERATIONS.

Lets think about movement. Explain what needs to happen to isolate the variable for each example below.

<p>When you are trying to get rid of a <u>positive number or addition</u></p> $x + 2 = 9$ <p>SUBTRACT 2 FROM EACH SIDE.</p>	<p>When you are trying to get rid of a <u>negative number or Subtraction</u></p> $z - 4 = 20$ <p>ADD 4 TO EACH SIDE.</p>	<p>When you are trying to turn <u>something positive</u></p> $-v = 10$ <p>MULTIPLY OR DIVIDE EACH SIDE BY A -1. "IT'S INVISIBLE"</p>
<p>When you are trying to get rid of <u>division</u></p> $\frac{x}{5} = 10$ <p>MULTIPLY BOTH SIDES BY 5.</p>	<p>When you are trying to get rid of <u>multiplication</u></p> $5w = 25$ <p>DIVIDE BOTH SIDES BY 5.</p>	<p>When you are trying to get rid of <u>a Fraction</u></p> $\frac{1}{2}x = 3$ <p>MULTIPLY BOTH SIDES BY THE "RECIPOCAL" OF $\frac{1}{2}$ WHICH IS $\frac{2}{1}$.</p>

How many steps did it take us to isolate each of the variables above?

ONE

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Homework: Solving one-step equations

Solve each equation.

*1. $v + 8 = 26$

2. $m + 4 = -12$

*3. $m - 9 = -13$

4. $15 = x + 2$

*5. $-104 = 8x$

*6. $\frac{k}{11} = 16$

7. $15x = 0$

8. $-13 = \frac{m}{4}$

9. $-16 = x - 15$

10. $x - 6 = -5$

11. $-10n = 40$

12. $9w = 81$

*13. $\frac{1}{2}x = 10$

14. $\frac{1}{4}y = 5$

15. $15 = -3x$

16. $\frac{x}{-2} = -17$

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Homework: Solving one-step equations

Solve each equation.

$$\begin{array}{r} *1. \quad v + 8 = 26 \\ \quad \quad -8 \quad -8 \\ \hline v = 16 \end{array}$$

$$\begin{array}{r} 2. \quad m + 4 = -12 \\ \quad \quad -4 \quad -4 \\ \hline m = -16 \end{array}$$

$$\begin{array}{r} *3. \quad m - 9 = -13 \\ \quad \quad +9 \quad +9 \\ \hline m = -4 \end{array}$$

$$\begin{array}{r} 4. \quad 15 = x + 2 \\ \quad \quad -2 \quad -2 \\ \hline 13 = x \end{array}$$

$$\begin{array}{r} *5. \quad \frac{-104}{8} = \frac{8x}{8} \\ \text{WATCH THE SIGNS.} \\ \hline -13 = x \end{array}$$

$$\begin{array}{r} *6. \quad \frac{(11)k}{11} = 16 (11) \\ \hline k = 176 \end{array}$$

$$\begin{array}{r} 7. \quad \frac{15x}{15} = \frac{0}{15} \\ \hline x = 0 \end{array}$$

$$\begin{array}{r} \text{WATCH THE SIGNS} \\ *8. \quad \frac{(4)}{4} - 13 = \frac{m}{4} (4) \\ \hline -52 = m \end{array}$$

$$\begin{array}{r} 9. \quad -16 = x - 15 \\ \quad \quad +15 \quad +15 \\ \hline -1 = x \end{array}$$

$$\begin{array}{r} 10. \quad x - 6 = -5 \\ \quad \quad +6 \quad +6 \\ \hline x = 1 \end{array}$$

$$\begin{array}{r} 11. \quad \frac{-10n}{-10} = \frac{40}{-10} \\ \hline n = -4 \end{array} \quad \text{WATCH THE SIGNS}$$

$$\begin{array}{r} 12. \quad \frac{9w}{9} = \frac{81}{9} \\ \hline w = 9 \end{array}$$

$$\begin{array}{r} *13. \quad \frac{(2)}{2} \frac{1}{2} x = 10 \left(\frac{2}{1} \right) \\ \text{MULTIPLY BY RECIPROCAL} \\ \hline x = \frac{20}{1} = 20 \end{array}$$

$$\begin{array}{r} 14. \quad \frac{(4)}{4} \frac{1}{4} y = 5 \left(\frac{4}{1} \right) \\ \hline y = \frac{20}{1} = 20 \end{array}$$

$$\begin{array}{r} 15. \quad \frac{15}{-3} = \frac{-3x}{-3} \\ \hline -5 = x \end{array} \quad \text{WATCH THE SIGNS}$$

$$\begin{array}{r} *16. \quad \frac{(2)x}{-2} = -17(-2) \\ \hline x = 34 \end{array} \quad \text{WATCH THE SIGNS}$$