

Start working on the worksheet. Only work on the first page and ✨ Division Property of Equality

Do not work Two-step equations.

You will NOT need your Algebra Nation wb today.

You will need 2 different colored pens or pencils.

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### Equations Review

Use the following equation to answer the questions:  $6x + 5 - 3y = 12$

- 1) Is it an equation, expression or an inequality? equation  
How do you know? = sign
- 2) Identify the term(s): 6x, 5, -3y, 12
- 3) Identify the variable(s): x, y
- 4) Identify the constant(s): 5, 12
- 5) Identify the coefficient(s): 6, -3

The **goal** in equation solving is to isolate the variable. This means that the coefficient of the variable must be positive 1.

The **process** used to solve equations is inverse operations.

Equations must be in balance, like a scale. When reading an equation out loud, you can replace the words, "is equal to" with "is the same as."

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How would you solve this equation?  $x - 4 = 12$

Use the addition operation to undo the subtraction. Adding 4 to both sides of the equation will isolate the variable,  $x$ , on the left side. The solution, 16, will be on the right side. Rewrite and solve the equation below showing your work.

$x - 4 = 12$

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**Division Property of Equality:** If you divide each side of an equation by the same number, the two sides remain equal.

Example:

- $2x = -8$
- What is the coefficient in this equation? 2
  - What is the opposite (inverse) of multiplying by 2? dividing by 2
  - Use the division property of equality: divide both sides of the equation by 2.
  - $x = \underline{-4}$

Check:  $2x = -8$ . Replace the x with the -4.  
 $2(-4) = -8$

$2x = -8$

$x = -4$

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$-2 + z = 6$

=

$$\begin{array}{r} -2 + z = 6 \\ +2 \quad +2 \\ \hline z = 8 \end{array}$$

✓  $-2 + 8 = 6$   
 $6 = 6$

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$-6 = 3x$

=

$$\begin{array}{r} -6 = 3x \\ \underline{3} \quad \cancel{3} \\ -2 = x \end{array}$$

✓  $-6 = 3(-2)$   
 $-6 = -6$

$-2 = x$

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

$x = 6$

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

$x = 6$

$\frac{6}{2} = 3$

$3 = 3$

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

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$-7 = -\frac{c}{8}$

$c = 56$

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$-7 = -\frac{c}{8}$

$56 = c$

$-7 = \frac{56}{8}$

$-7 = 7$

$-\frac{1}{8} = -\frac{1}{8} = \frac{1}{8}$

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## Two-Step Equations

$2x + 2 = -6$

$x = -4$

$$\begin{array}{r|l}
 \boxed{2x} + 2 & = -6 \\
 -2 & -2 \\
 \hline
 2x & = -8 \\
 \frac{2}{2} & \frac{2}{2} \\
 x & = -4
 \end{array}$$

✓  $2(-4) + 2 = -6$   
 $-8 + 2 = -6$   
 $-6 = -6$

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$2x - 3 = -5$

$x = -1$

$$\begin{array}{r|l}
 \boxed{2x} - 3 & = -5 \\
 +3 & +3 \\
 \hline
 2x & = -2 \\
 \frac{2}{2} & \frac{2}{2} \\
 x & = -1
 \end{array}$$

✓  $2(-1) - 3 = -5$   
 $-2 - 3 = -5$   
 $-5 = -5$

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$$\frac{m}{2} + 6 = 10$$

$$\frac{m}{2} + 6 = 10$$

$$3 = 8$$

$$\frac{m}{2} + 6 = 10$$

$$-6$$

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$$3 = 8$$

$$4 + 6 = 10$$

$$4 + 6 = 10$$

$$10 = 10$$

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### Homework

Complete the "Equation Review" ws including the 4 problems at the end.

Be sure to rewrite each equation in your notebook so you have room to show your work.

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