Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Week of Tuesday, October 16th- Thursday, October 18th Guided Notes:   
**1 & 2 Step Equations and the Distributive Property**

**Tuesday, October 16th**

**> Do Now:**

1. What is a variable? Write your own definition and include an example.
2. Solve for x. TRY YOUR BEST! √x = 9

**> One-Step Equations**

* **Equation** – a comparison of two sets of numbers with an equal sign.
  + Each side of the equal sign is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + **Ex: 3x + 7 = 10**
* **Variable** – a placeholder for a number we **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Represented by a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
    - 3x + 7 = 10 🡪 **\_\_\_\_\_\_** in this example
  + Sometimes has a number with it called a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
    - 3x + 7 = 10 🡪 **\_\_\_\_\_\_** is the coefficient in this example
* **Constant** – the numbers in the equation that we **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + 3x + 7 = 10 🡪 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are constants in this example
* In order to solve an equation, we must first determine what we should do first.
  + We find this out by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
    - Which means we solve an equation by doing **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* After we determine what operation we should do, we begin isolating the variable by doing the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

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| **Example 1:** Solve for x. 10x = 85   1. Identify the operation that is happening to the variable.    * **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 2. Do the inverse of whatever is happening with the variable.    * Instead of multiplying by 10, we do the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**    * We must **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 3. After we divide both sides by 10 we get **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Example 2:** Solve for f. 10 = f/4   1. Identify the operation that is happening to the variable.    * **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 2. Do the inverse of whatever is happening with the variable.    * Instead of dividing by 4, we do the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**    * We must \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. After we multiply both sides by 4 we get **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Example 3:** Solve for q. q + 25= 32   1. Identify the operation that is happening to the variable.    * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Do the inverse of whatever is happening with the variable.    * Instead of adding 25 to q, we do the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**    * We must **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 3. After we subtract both sides by 25 we get **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Example 4:** Solve for m. 30 = -52 + m   1. Identify the operation that is happening to the variable.    * **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 2. Do the inverse of whatever is happening with the variable.    * Instead of subtracting 10 from m, we do the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**    * We must **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** 3. After we add 52 to both sides we get **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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| **Example 5:** ½ x = -10 | **Example 6:** x/4 = ¾ |
| **Example 7:** -½ + s = | **Example 8:** x/3 = 12 |
| **Example 9:** 5x = 23 | **Example 10:** x = 25 |
| **Example 11:** ¼ + x = 24 | **Example 12:** ¼ + f = |
| **Example 13:** √x = 12 | **Example 14:** x2 = 100 |
| **Example 15:** ¾x = 6 | **Example 16:** x/-5 = 14 |
| **Example 17:** -93 + s = -107 | **Example 18:** x2 = 81 |
| **Example 19:** -7q = -12 | **Example 20:** -¾ + t = |
| **Example 21:** x/0.5 = | **Example 22:** h = ¼ |
| **Example 23:** √x = 14 | **Example 24:** k – 22 = 45 |

**Wednesday, October 17th**

**> Do Now:**

1. Solve for r. ½ r = 32
2. Solve for y. y/7 = 10
3. Solve for p. -12 + p = -34

**> Distributive Property**

* **The Distributive Property:** an algebraic property which is used to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** a single term to terms inside a set of parentheses.
  + Ex: 3(4 + 5)
  + Ex: -( x + 7)

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| **Example 1:** Simplify. -2(5 + 10)   1. Identify the number to be distributed.    * In this example, **\_\_\_\_\_\_\_** is to be distributed. 2. Distribute the term to each term in the parenthesis by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**    * **(-2 ∙ 5) (-2 ∙ 10)** 3. Simplify.    * **(-2 ∙ 5) (-2 ∙ 10)** |
| **Example 2:** Simplify. 3(-9 - 7)   1. Identify the number to be distributed.    * In this example, **\_\_\_\_\_** is to be distributed. 2. Distribute the term to each term in the parenthesis by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.    * **(3 ∙ -9) (3 ∙ -7)** 3. Simplify. |
| **Example 3:** Simplify. -(5 + 12)   1. Identify the number to be distributed.    * In this example, \_\_\_\_\_\_ is to be distributed. 2. Distribute the term to each term in the parenthesis by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.**    * **(-1 ∙ 5) (-1 ∙ 12)** 3. Simplify. |
| **Example 4:** Simplify. -2(-6 - 8)   1. Identify the number to be distributed.    * In this example, \_\_\_\_\_\_ is to be distributed. 2. Distribute the term to each term in the parenthesis by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**    * **(-2 ∙ -6) (-2 ∙ -8)** 3. Simplify. |
| **Example 5:**  9( -3 + 4) |
| **Example 6:**  8(-3 + 6) |
| **Example 7:**  -(9 -7) |
| **Example 8:**  -5(-6 – 3) |
| **Example 9:**  ½ (3 + 2) |
| **Example 10:**  4( -7 + 9) |
| **Example 11:**  3(4 – 10) |
| **Example 12:** -2( x + 7) |
| **Example 13:** -(4 + y) |
| **Example 14:** 3(5 + 2w) |
| **Example 15:** 4 (10 - x) |
| **Example 16:** -x ( 3 + 7) |
| **Example 17:** 5( 2x + 4) |
| **Example 18:** -9(3 + 3x) |
| **Example 19:** -7( x + 3) |
| **Example 20:** -6(-2 - 5x) |
| **Example 21:** - 4(-x + 3) |

**Thursday, October 18th**

**> Do Now:**

1. Simplify. -5 ( x + 7)
2. Simplify. -( -x + 4)
3. Simplify. 5(2x + 3)

**> Two-Step Equations**

* With Multi-Step Equations it can be hard to know where to start…. pretend it’s a party!
* You are the host - a.k.a. ‘X’
* In what order do people leave a party?
  + **Enemies** *(get rid of them to avoid trouble)*
    - *We’ll learn about them later!*
  + **Acquaintances** *(after mingling with everyone, they usually leave early)*
    - *We’ll learn about them later!*
  + **Friends** *(they hang out with the host a little longer)*
  + **Family** *(if attending, they will stay to the end to help clean)*

**Steps:**

1. **Identify the party-goers.**
2. **Eliminate party-goers in order.**
3. **Get x (the host) alone.**
4. **Check your solution.**

**REMEMBER! The equal sign is the door…who goes out the door FIRST?**

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| **Example 1:** 2x – 5 = 21 |
| **Example 2:** -3(5x – 2) = 36 |
| **Example 3:** 4x - 10 = 24 |
| **Example 4:** -(-x + 4) = 12 |
| **Example 5:** ¾x + ½ = 15 |
| **Example 6:** -2 (9x + 8 ) = 87 |
| **Example 7:** x/2 + 10 = 45 |
| **Example 8:** ½ (3x + 8) = 55 |
| **Example 9:**  -4(10x +2) = 44 |
| **Example 10:** -6/x + 24 = 60 |
| **Example 11:** -4x – 20 = -85 |
| **Example 12:** 5(x + 10) = 30 |
| **Example 13:** -6(2x + 3) = 48 |
| **Example 14:** 7x + 14 = -28 |