Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Math 7

Chapter 4 – Expressions & Equations Notes #11

**Pre-Lesson Important Algebraic Vocab**

Important Vocabulary for Simplifying Expressions:

* 1. Variable - a symbol that represents an \_\_\_\_\_\_\_ value.
	2. Coefficient – the number that is placed in \_\_\_\_\_\_ of the variable.
	3. Constant – a \_\_\_\_\_\_ quantity that does \_\_\_\_\_ \_\_\_\_\_\_\_.

Complete the table listing all coefficients, constants and variables.

|  |  |  |  |
| --- | --- | --- | --- |
| **Expression** | **Coefficients** | **Constants** | **http://www.jolenemorris.com/Images/QuestionHead2.gifVariables** |
| 8y + 1 |  |  |  |
| 9x + 2y + 8 |  |  |  |
| -3y + 2 + 20z + 4y |  |  |  |
| 14 + 3xy + 2xz – 3 |  |  |  |

 **Combining Like Terms**
How are each set of algebraic monomial terms the same?

a) 3x 9x -5x each term has \_\_\_\_\_\_\_\_\_

b) 9y y 34y -3y each term has \_\_\_\_\_\_\_\_\_

c) -3rt 4rt 25rt rt each term has \_\_\_\_\_\_\_\_\_

LIKE Terms

have \_\_\_\_\_\_\_\_\_ variable parts

Examples:

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

UNLIKE Terms

have \_\_\_\_\_\_\_\_\_ variable parts

Examples:

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_ and \_\_\_\_\_

**Place** the like terms in the same circle.
 5 -xyz y 2 3x 43xyz

-3 4xyz 6y 7x 3xyz x 17

Your Turn

Label as LIKE or UNLIKE terms:

1. 6x and 6y \_\_\_\_\_\_\_\_\_
2. 6m and 2m \_\_\_\_\_\_\_\_\_
3. 2j and -5j \_\_\_\_\_\_\_\_\_
4. -5n and -5m \_\_\_\_\_\_\_\_\_
5. 5m and 7 \_\_\_\_\_\_\_\_\_
6. x and 7x \_\_\_\_\_\_\_\_\_
7. 4m and 4m2 \_\_\_\_\_\_\_\_\_
8. 6 and -4 \_\_\_\_\_\_\_\_\_

**Combining LIKE Terms**

Combining like terms allows us to \_\_\_\_\_\_\_\_\_ algebraic expressions.

\_\_\_\_\_\_\_\_\_ terms \_\_\_\_\_\_\_\_\_ be combined

\_\_\_\_\_\_\_\_\_ terms \_\_\_\_\_\_\_\_\_ be combined

**Let’s return** to the diagram we used earlier and COMBINE the LIKE TERMS.

 **STEPS**: To Combine Like Terms

* \_\_\_\_\_\_\_\_\_ like terms
* \_\_\_\_\_\_\_\_\_ them
	+ \_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_ the same

Examples: Let’s simplify the following by combining like terms.

 One **KEY** to this is to remember to always look at the sign **in front of** each term! It will tell you if the term you are combining is positive or negative! We will talk about this as we look at these examples.

1. 3a + 2a

1. 2n + 5n
2. x + 4x + 5
3. 7y - 2y + 6z
4. -12w + 8 + 10w - 3
5. 8y – 5y + 3x – 7x
6. -7p - 6p
7. 4x + 4 - 9x + 3
8. -12a + 2b + 4b + 10a
9. 9x + 2xy - x + 4xy + 3
10. 5r – 8t + 3r – 4t
11. -20d – 10 + 10d + 10



Your Turn – Check for Understanding

1) Place all like terms in the correct circle.

 -15 20y 3x 0 7y -5x -3y -12 x y

State whether the term is positive or negative.
 2) - 5x \_\_\_\_\_\_\_\_\_\_\_

 3) + 10y \_\_\_\_\_\_\_\_\_\_\_

 4) - 10p \_\_\_\_\_\_\_\_\_\_\_

\*5) - (-3w) \_\_\_\_\_\_\_\_\_\_\_

Simplify the expression by combining like terms.

1. 20y + 2y
2. 3x + 10x + 8y + 4y
3. 4u + 10 - 2u - 3
4. -12w + 10 + 10w – 5
5. -4y – 6y + 3