Unit 3 Day 2 – Combining Like Terms Classwork Name: _____

Important vocabulary terms:

1. What is the difference between an expression and an equation?

2. What is a term?

3. What is a constant?

4. What is a coefficient?

5. Complete this table:

Expression	Terms	Constants	Coefficients
$4x^2 - 5x + 2y - 3$			
$7 - a + 6abc + a - 4$			
$m + n - p + q$			

Imagine you have a box of donuts. You can't see how many donuts are in the box, so you use the variable x to represent how many donuts there are inside the box. Assume every box of donuts has the same number of donuts inside. (x)

6. Write an expression to represent 13 boxes of donuts.

7. Write an expression to represent 9 boxes of donuts, plus 4 loose donuts.

Imagine you have 3 boxes of donuts plus 7 loose donuts, then you buy 2 more boxes of donuts and 6 more loose. An expression to represent this situation might be 3x + 7 + 2x + 6.

8. How many boxes and how many loose donuts are there all together? Write an expression.

We can combine the 3x and the 2x to be 5x, because we are adding identical items (boxes of donuts). We can also add the loose donuts together to get 7 + 6 = 13. These are examples of LIKE TERMS. Like terms can be added together because their variables are identical. $4x^2$ and $-3x$ are NOT like terms because their variables have different exponents.

9. Combine the like terms in this expression: -2x + 4 + x – 7 + 4x – 3 + 2 – 2x

Now imagine you have some paper bags with chocolate candies inside. Each bag has the same number of candies, but you don't know how many are in each bag so you use the variable y to represent the number of candies in each bag.

10. How could you interpret the expression 2x + 5y in context of the donuts and candies?

11. Can you simplify the expression 2x + 5y any further? Can you simplify the expression $2x^3 + 5x$ any further?

12. Simplify this expression by combining like terms: -4y – 1 + 3x + 2 – x + 3 – 2y + y – 5

Practice combining like terms a few more times:

13. a + a + a + a 14. x – x – x – x 15. -x – x – x – x 16. m + n + m + n

If you were to purchase a combo meal at a fast food restaurant, you'd get a burger, fries and a drink.

17. If you purchase 3 combo meals, how many burgers, fries, and drinks would you buy?

18. If you bought 7 combo meals, then gave away 2 of them, how many of each would you have left?

19. The combo meals can help you consider the distributive property when working with variables and expressions. If three variables are added together in a group, such as (x + y + z), and you have 3 groups of them: 3(x + y + z), then how many of each variable would you have? Write an expression:

20. Think of the combo meals to help you simplify this expression: 7(x + y + z) -2(x + y + z)

Practice the distributive property a few more times:

21. 11(2x + 3y – 8z)

22. -5(x – y)

23. –(14 + c)

24. 6 + 2(1 + x)

The distributive property is a method of multiplying expressions. The method we use to "undo" distribution is called factoring. You should already be familiar with factoring a number. The factors of 15 are 3 and 5, because 3 multiplied by 5 is 15.

25. What are the factors of 3x + 3y? (What two expressions were multiplied together to produce this expression?)

Practice factoring a few more times: (undo the distributive property)

26. 9x – 12

27. 8mn – 6xyz + 4a

28. $x^2 + 5x$

29. 4m + 2