



Date: _____

3.5 Collecting Like Terms

When we are writing algebraic expressions, we need to be able to **simplify**. This just means that we need to write the expression in the shortest form that is equal to the original expression.

To do this, we need to classify our terms as **like terms** and **unlike terms**. We can add or subtract **LIKE TERMS ONLY!**

Like terms are terms with the same _____ AND _____.

	Description	Algebraic Representation
		
		
Total		

Once we have identified like terms (using our coloured pens that you got the last time you were in class), we need to collect them. When we are rewriting our expression it is important to remember that **the sign in front of a term is attached to it.**

Collecting like terms just means to write your expression with like terms grouped together.

Once your like terms are collected, you add/subtract the coefficients of all like terms, leaving the variable and exponent the same.

Let's try it together. Simplify the expression given below by collecting like terms. For now you **MUST** use colours and boxes.

$$-5xy - 3x^2 + 8y + 11xy - 15y - 8x^2$$



Practice Problems

1) Use coloured boxes and collect like terms, then simplify each expression.

a) $2x^2 - 2x + 5 + 3x - 4x^2 - 2$

b) $5y + 3x - 7 + 5 - 4x + 2y$

c) $2xy - 5x + 3x - x^2y + 8x - 2x^{2y}$

d) $9y + 5x - 7x + 9y - 10x - 8y$

2) The length of a rectangular field is four times its width. Write an expression for the perimeter of the field, and then simplify it. A diagram is a good place to start!

Find the perimeter and area of the field if the width is 20 m.

3) A friend from Mrs. Mariani's math class simplified the following expression incorrectly. Identify the error in their solution and explain what went wrong and how they can correct it.

$$-5x + 6x + 2y - 8y$$

$$= x^2 - 6y$$

