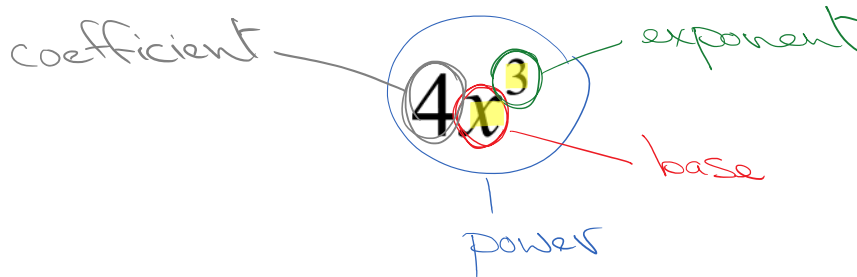


**Math 9 Review – Part 2**  
**Distributive Law and Like Terms**



**Like Terms**

Like terms are terms that have the **same variable(s)** with the **same exponent(s)** of the variable(s). The only thing different are the coefficients.

**Example 1:**

$$4x^3 + 2x^3 - x - 1x^3 = 5x^3 - x$$

The equation shows the combination of like terms. Red arrows point from the coefficients 4 and 2 to 5, and from the coefficients 1 and -1 to -1. The terms  $x^3$  and  $x$  are highlighted in yellow.

**Combining Like Terms**

When we combine like terms we are simplifying an algebraic expression.

- Identify like terms : *same variable & exponent*
- Group like terms together (be sure to include the correct sign in front of each term)
- Add/subtract the coefficients of each like term together
- Write your final answer

**Example 2:** Simplify the following expressions:

a)  $2a + 3c - 6a + 4b - 5c + 3b$

$$= -4a + 7b - 2c$$

b)  $-4x + 5x^2 + 3x - 2x + 6x^2$

$$= -3x + 11x^2$$

## Distributive Law

The distributive law is an algebra property which is used to multiply a single term and two or more terms inside a set of parentheses.

We often use the expression "expand" when we need to use the distributive law. *multiply*

**Example 3:** Simplify the following expressions:

$$\begin{aligned} \text{a) } & 4(a+6) \\ & = 4a + 24 \end{aligned}$$

$$\begin{aligned} \text{b) } & 5 + 3(2b-1) \\ & = 5 + 6b - 3 \\ & = 2 + 6b \end{aligned}$$

$$\begin{aligned} \text{c) } & -6(5+x) - (7x-11) \\ & = -30 - 6x - 7x + 11 \\ & = -19 - 13x \end{aligned}$$

$$\begin{aligned} \text{b) } & 8(c+5) - 6c + 2(9c-3) \\ & = 8c + 40 - 6c + 18c - 6 \\ & = 20c + 34 \end{aligned}$$

Integers :  
Multiply/Divide

$$(+)(+) = +$$

$$(-)(-) = +$$

$$(+)(-) = -$$

$$(-)(+) = -$$

Add/Subtract.  
think of temperature.