Polynomials

Monomial

a number   *or*   variable   *or*   number x variable

Remember.....
*Terms that are **held together by MULTIPLICATION** are monomials.*

Binomial

TWO terms that have **ADDITION or SUBTRACTION** between them

Trinomial

THREE terms that have **ADDITION or SUBTRACTION** between them.

Standard Form

When terms of a polynomial are written in the ***order of their EXPONENTS***
(highest to lowest).

Remember.....

⭐ More than one variable means ***NO STANDARD FORM***!

⭐ Numbers with *NO VARIABLE* go at the *END* of the polynomial.

Finding the Leading Coefficient

1. Write the polynomial in **_STANDARD FORM._**
2. The **_FIRST NUMBER_** of the polynomial is the **_LEADING COEFFICIENT_**.

Operations with Polynomials

Remember..... **ALWAYS look at the operation in the middle first!**

ADDITION:

When adding polynomials:

1. <u>REWRITE</u> the problem without the parentheses.

2. <u>COMBINE</u> the <u>LIKE TERMS</u>

> ***They have the "SAME LAST NAME!"***

3. <u>BE CAREFUL!</u>.....Be aware of <u>positive and negative numbers</u>!

SUBTRACTION:

When subtracting polynomials:

REMEMBER: KEEP.....CHANGE....CHANGE

1. **KEEP** the <u>first polynomial</u>.

2. **CHANGE** the <u>subtraction to addition</u>.

3. **CHANGE** all of the <u>signs in the 2nd polynomial</u>.

4. <u>COMBINE</u> the <u>LIKE TERMS</u>

> ***They have the "SAME LAST NAME!"***

MULTIPLICATION:

When multiplying polynomials:

1. **MULTIPLY** the **COEFFICIENTS** (the numbers!)

2. **MULTIPLY** the **VARIABLES** *(keep the base…add the exponents!)*

DISTRIBUTIVE PROPERTY:

MULTIPLY the term *OUTSIDE* the PARENTHESES *by ALL of the terms INSIDE* the PARENTHESES.

Use the RAINBOW!

DIVISION:

When dividing polynomials:

1. **REWRITE** the problem **as a FRACTION**.

2. **REWRITE each polynomial** and monomial **as a SEPARATE FRACTION.**

3. Be sure to **KEEP** the **OPERATION in BETWEEN**.

4. **DIVIDE** the **COEFFICIENTS.**

5. **DIVIDE** the **VARIABLES** *(keep the base….subtract the exponents).*

Remember…. NEGATIVE EXPONENTS MUST BE WRITTEN AS A FRACTION!

$$a^{-n} = \frac{1}{a^n}$$