Polynomials

Clear Learning Target

You will be able to identify and categorize polynomials by number of terms and degree.

You will be able to add and subtract polynomials.

Words Worth Knowing!

monomial - a number, a variable, or a product of a number and one or more variables

polynomial - a monomial or sum of monomials ✱ 4 or more terms

**cannot have negative exponents nor variable exponents*

binomial - sum of **two** monomials

trinomial - sum of **three** monomials

Degrees

degree of a monomial - the **sum** of the exponents of all a monomial's variables

degree of a polynomial - the **greatest** degree of any term in the polynomial

✱ 3 2 0

$$x^3 - 10xy^{1+1} + 1$$

cubic trinomial

Naming Polynomials

Degree	Name
0	constant
1	linear
2	quadratic
3	cubic
4	quartic
5	quintic
6 or more	6th degree, 7th degree, and so on

MORE Words Worth Knowing!

standard form (polynomials) - a polynomial that is written with the terms in order from greatest degree to least degree

$x^2 - x + 5$ $-5x^2y + 5x^2$

leading coefficient - the coefficient of the term with the highest degree in a polynomial

Example #1: Write each polynomial in standard form. Then find the leading coefficient.

$$3x^2 + 4x^5 - 7x$$

$4x^5 + 3x^2 - 7x$

quintic trinomial

You Try! Write the polynomial in standard form. Then find the leading coefficient.

$$5y - 9 - 2y^4 - 6y^3$$

$-2y^4 - 6y^3 + 5y - 9$

quartic polynomial