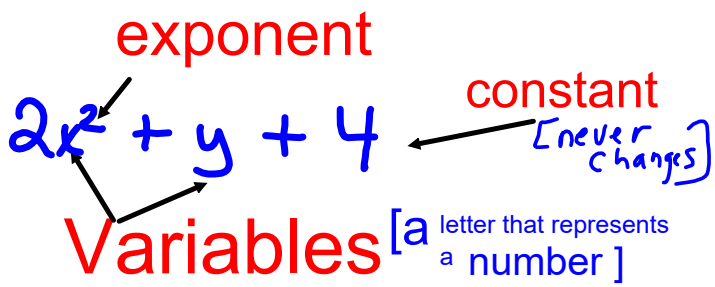
- constants [like 3, -20, or 1/2]
- Variables [like x , y etc]
- exponents [like the 2 in y^2] but only whole number exponents



Polynomials are combined using:

- addition [+], subtraction[-]

Term-a constant [number], variable ***or*** the product of a number and variable.

Examples of a Term $2, y, 2xy, 2x^2, -3x, -2$

constant $2, -2$

Variable y, x

product of a number and a variable $2xy, -3y, 2x^2$

Polynomial	How many terms	List the terms (commas)	Identify constant if there is one ↳ # by itself
A. -3	1	-3	-3
B. $4a^2$	1	$4a^2$	none.
C. $-3a + 4a^3$	2	$-3a, 4a^3$	none
D. $-3xy + 2$	2	$-3xy, 2$	2
E. $-4x + 3a + 2$	3	$-4x, 3a, 2$	2
F. $2x^2 + 4x - 3y + 2$	4	$2x^2, 4x, -3y, 2$	2

The degree of a term is the sum of the exponents of the variables in a single term. For example, the degree of $4x^2y^1$ is 3.

The term with the greatest exponent determines the *DEGREE* of the polynomial.

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

The term -2x has a degree of 1

The term 5 is *constant term*. Its value does not change when the value of x changes. *A constant term has a degree of 0.*

What is the degree of the polynomial?

Polynomial	Degree [Highest exponent]	# Terms
a) $-3x^4$	4	1
b) $-2x^2 + 3x^1 - 4$	2	3
c) $2x^4 + 4x^6 - 6$	6	3
d) $-3x^2 + 4x^3 - 2x + 4$	3	4
e) 4	none	1

What is not a polynomial?

If an expression has a square root of a variable $\sqrt{x}$, or has a variable in the denominator $\left(\frac{1}{x}, \frac{2}{x^2}\right)$ it IS **NOT A POLYNOMIAL!**

Complete the Chart below:

Polynomial	#terms	list terms	degree [highest exponent]	constant [just a number]
a. $3x + 4y^2$	2	$3x, 4y^2$	2	none
b. $3x^1$	1	$3x$	1	none
c. -3	1	-3	none	-3
d. $3x - 4x^3 - 4$	3	$3x, -4x^3, -4$	3	-4

Classifying polynomials [look at the number of terms]...

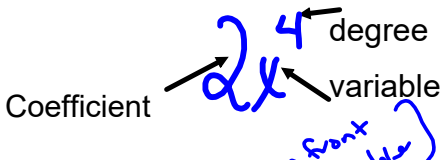
Polynomials with 1, 2, or 3 terms have special names.

A **monomial** has 1 term, for example: 4a, 6, $-2p^2$

A **binomial** has 2 terms, for example: 2c - 5, $2m^2 + 3m$

A **trinomial** has 3 terms, for example: $2h^2 - 6h + 4$

Numerical
Coefficient- found in front of a variable



(# in front variable) (highest exponent) [Monomial Binomial Trinomial]

Term	Coefficient[s]	degree	variable[s]	constant	Classify
a. $2x + 4y^2$	2, 4	2	x, y	none	binomial
b. $-3a^2$	-3	2	a	none	monomial
c. $-2xy + 4a^3 + 2$	-2, 4	3	x, y, a	2	trinomial
d. 6	none	none	none	6	monomial

Classify/type

Polynomial	Monomial, Binomial or Trinomial?	Coefficient[s]	Degree	Constant
A. $-3x^3$				
B. $9r - 7$				
C. $-3y^2 - 4y + 6$				

*** The sign in front of the term goes with the coefficient or constant ***