U2D3 **Polynomials**

Definitions:

Term: A term has a _____(called a numerical coefficient) and may have a _____ (called variable(s)) and possibly _____ on the variables. The number and letter(s) are _____ together.

Examples: x (this term has a coefficient of 1), 17 (this is called a constant term since there is no variable), 0,

Variable(s): The _____ in a term are called variable(s).

Variable-Part: The _____ _____ in a term is the variable-part. (Just remove the coefficient from the term to get the variable-part.)

Coefficient: The _____ in front of the variable-part of a term is the _____. (Short for _____ _____.)

Like Terms: Terms that have exactly the _____ _____-_____ are called like terms. (Same letter(s) with the same exponent(s)).

Examples: $6xy^2$,$7y^2x$,

($7y^2x = 7xy^2$… we write the letters alphabetically to make it easier to identify like terms… note : $4x^2y$ is not like $6xy^2$.)

Unlike Terms: Terms that are not "_____".

Examples: $3x$, $3x^2$

Polynomials **:** A polynomials is any number of unlike terms _____ or _____ together. A single term may also be a polynomial.

SPECIAL POLYNOMIALS: Polynomials are classified according to the number of terms they contain.

Name	**Number of Unlike Terms**	**Example(s)**
	One	2x+3x=5x or
	Two	
	Three	

If a polynomial contains _____ _____ _____ terms, it is just classified as an n-term polynomial. For example, a polynomial with 7 terms is classified as a 7-term polynomial – it does not have a 'special' name.

Degree of a Term: To find the degree of a term, add up all the exponents on all the _____ in the _____.

Term	Sum of Exponents	Degree of Term
$5x^2$		
4		0 (the degree of a constant term is always zero)
2^2	0 (there are no variables – we only count up exponents on variables)	
$3x^2y$		
$-4x^3y^8z^2$		
7x	1 (The exponent on x is one)	

U2D3 **Polynomials**

Degree of a Polynomial: To find the degree of a polynomial, find the degree of each term in the polynomial. The highest of those is the degree of the polynomial.

Polynomial	Degree of the terms	Degree of the Polynomial
$5x^2y$		
$2x-7x^8$	1, 8	
$4xy-7x^3y^2+5x^4-2$		

Example: Complete the following chart.

Term	Coefficient	Variable(s)	Variable-part	Degree
3xy				
$-139x^5y^2$				
ab				
-11		----- (there are no variables - this is a "constant" term	----- (there is no variable-part)	
-ab				
$\frac{7x^4}{3}$				