1/26 Algebra 1 - Downing

Unit 6 - Polynomials and Factors

Nomial - "a name or a term"

** In a math expression, terms are separated by a plus or minus

Monomial - one term Ex: $(-3x^5)$

Binomial - two terms Ex: $(-3x^5+2x)$

Trinomial - three terms Ex: $(-3x^5+2x-7)$

Polynomial - "many terms" (four or more terms)

Degree of a Polynomial - the highest exponent on a variable in a polynomial.

Ex) $-2x^5 \rightarrow$ Monomial Degree = 5

$x^2-3x+5 \rightarrow$ Trinomial Degree = 2

Standard form - the exponents in the polynomials must go from highest to lowest.

Ex) $-6+3x-7x^2 \rightarrow$ Standard Form: $-7x^2+3x-6$

Leading Coefficient = -7

(LC) Leading Coefficient: when written in standard form, it is the first number

Naming by Degrees

Degree	Name	Examples
0	Constant	6 or -5
1	Linear	$2x$ or $-3x+5$
2	Quadratic	$3x^2+5$ or $-7x^2$
3	Cubic	$5x^3+7x$ or $-2x^3$
4	Quartic	$3x^4+2x^2+7$
5	Quintic	$4x^5+2$

Ex) Write $15x - x^3 + 3$ in standard form. Identify the degree and Leading Coefficient of the Polynomial.

$-x^3 + 15x + 3$ Name: Cubic Trinomial
LC: -1

Ex) $-3z^4$ Name: Quartic Monomial
LC: -3

Ex) $4 + 5x^2 - x \rightarrow 5x^2 - x + 4$ Name: Quadratic Trinomial
LC: 5

Ex) $8q + q^5 \rightarrow q^5 + 8q$ Name: Quintic Binomial
LC: 1

Find the sum: (Combine Like Terms)

Ex) $(2x^3 - 5x^2 + x) + (2x^2 + x^3 - 1) = 3x^3 - 3x^2 + x - 1$

Ex) $(3x^2 + x - 6) + (x^2 + 4x + 10) = 4x^2 + 5x + 4$

Find the difference: ** Distribute the negative

Ex) $(4n^2 + 5) - (-2n^2 + 2n - 4)$
$4n^2 + 5 + 2n^2 - 2n + 4$
$6n^2 - 2n + 9$

Ex) $(4x^2 - 3x + 5) - (3x^2 - x - 8)$
$4x^2 - 3x + 5 - 3x^2 + x + 8$
$x^2 - 2x + 13$