New Vocabulary	Definitions
Monomial	A real number, a variable or the product of a real number and one or more variable with whole no: exponent.
Degree of a monomial	The sum of exponents of variables.
Polynomial	Is a monomial or the sum or differences of two or more monomials called terms.
Degree of a polynomial	The greatest degree of any term of the polynomial.
Standard Form of a polynomial	Form in which the terms are written in descending order according to their degree.
Closure property	Polynomials are closed under Addition and subtraction because result of these operations is another polynomial.

Is it a monomial or not?

Ex 1. $15x^2$ Y   2

Ex 2. $\frac{1}{2}x^5y^2$ Y   7

Ex 3. $10a^0$ Y   0

Ex 4. $x + 1$ N   1

What is the Degree of monomials above?

Ex1.   Ex2.   Ex3.   Ex4.

Understand Polynomials:

One term (like x) is called ___Monomial___	1st degree (x) is called linear
Two terms (like x + 3y) is called ___Binomial___	2nd degree (x^2) is called quadratic
Three terms (like $x^2 + xy + 3$) is called ___Trinomial___	3rd degree (x^3) is called a cubic
Many terms is generically called ___Polynomial___	4th degree, 5th degree, ...

The degree for a term is the sum of the exponents for that term.

The greatest degree of any term indicates the degree of the polynomial. Linear, quadratic, cubic, 4th degree, etc.

Think- Pair-Share

A. Why does a constant have a degree of 0?

$9x^0$

$= 9(1)$

$= 9$

Try it .....

Fill in the table .

Polynomial	No: of terms	Degree	Name based on Terms	Name based on Degree
7	1	0	Monomial	Constant
4x	1	1	Monomial	linear
$3x^2 + 2x + 1$	3	2	Trinomial	Quadratic
$x + 7$	2	1	binomial	linear
$-5x^2y$	1	3	Monomial	Cubic
$-5x^2y + x^2 + x$	3	3	Trinomial	Cubic

$4x^2y^2 + 5x - 2y + 6$	4	4	Polynomial	fourth degree

Write Polynomials in standard form:

Ex: What is the standard form of the polynomial : $7\overset{4}{x} - \overset{5}{5} - \overset{2}{x^3} + \overset{1}{6x^4} - \overset{3}{3x^2}$

$$6x^4 - x^3 - 3x^2 + 7x - 5$$

Think-Ink-Share: If a polynomial in one variable is written in standard form, can it have two terms with the same degree?

Try it.....

Write each polynomial in standard form.

a. $7 - 3x^3 + 6x^2$

$$-3x^3 + 6x^2 + 7$$

b. $2y - 3 - 8y^2$

$$-8y^2 + 2y - 3$$

Like terms: are those terms that have the same variable to the same power. The coefficients do not have to be the same. When using algebra tiles, terms that are like have the same shape.

Examples of like terms: 5x and 4x $8x^2$ and $3x^2$ 7 and 8

Ex : Combine like terms and write the expression in standard form.

$$4x + 3x^2 + 2x + x^2 + 5 \quad \Rightarrow \quad 4x^2 + 6x + 5$$

Try it...........

Combine like terms and write each expression in standard form.

a. $4x^2 - 3x - x^2 + 3x$

$$5x^2$$

b. $7y^3 - 3y + 5y^3 - 2y + 7$

$$12y^3 - 5y + 7$$

HW: 7.1 WS