Unit 7 Day 1 Notes: An Introduction to Polynomials



Monomial: is a number, variable, or the product of a number and one or more variables with whole number. exponents (a monomial will never have addition, subtraction, division, or a negative exponent) 🕌 multiplication

Examples:

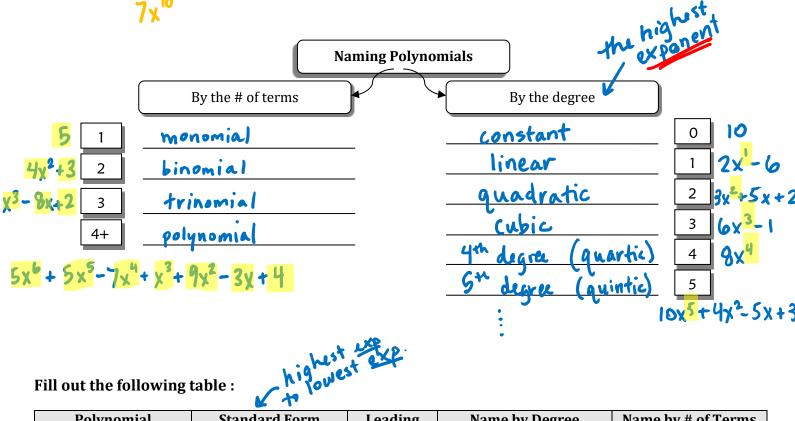
$$3x$$
, 15 , $\frac{1}{2}ab^{2}$, $-5x^{4}$

Non - Examples:
$$x+3$$
, 5 , x , x

Polynomial: is a monomial or sum/difference of monomials, each called a *term* of the polynomial

x + 3Examples:

$$2x^{2} + 6x - 7$$
 $7x^{10}$



Fill out the following table:

	Polynomial	Standard Form	Leading	Name by Degree	Name by # of Terms
			Coefficient		
1.	$x - 3x^3 + 2x^2 + 7$	$-3x^3+2x^2+x+7$	-3	cubic	polynomial
2.	4w - 6w ²	-6w2+4w	-6	quadratic	binomial
3.	5+ y	y+5		linear	binomial
4.	$3y^5 - 7y + 1$	3y 5-7y+1	3	5th degree (quintic)	trinomial
5.	7	7	7	constant	monomia
6.	** 5x ² y ³	5x2y3	5	2+3 = 5th degree	monomial

1.
$$x \cdot x = \chi^2$$

2.
$$x^2 \cdot x^3 = x^5$$

1.
$$x \cdot x = \chi^2$$
 2. $x^2 \cdot x^3 = \chi^5$ 3. $m \cdot m^4 \cdot m^5$ Without writing it out: $m^{10} \cdot m^6 = m^{16}$





Like Terms: A "term" is a monomial. Like terms must have the same variables with the same corresponding degree. Circle the like terms from each group of terms.

a.
$$3x, 4y, 3y$$

b.
$$3x^2$$
, $4y$, $3y^2$

c.
$$3x, \frac{1}{2}yx 3xy$$

d.
$$3x^2$$
, $4y^2$, $3y^2$, $4x$

$$e.(x)(0x)(-3x)$$

f.
$$(2xy^2)$$
, $4y^2$, $3x^2y$, $(-2y^2x)$

We can only add/subtract LIKE TERMS!
Simplify: Combine Like Terms. Write your answer in decreasing order (standard form).

1.)
$$(3s^2 + 7s - 6) + (s^3 + s^2 - s - 1)$$

$$5^3 + 45^2 + 65 - 7$$

You try these!
4.)
$$(1-4x-x^4)-(-x-3x^4)$$

2.)
$$(3x^2 - 2x + 10) - (2x^2 + 4x - 6)$$

$$3x^2 - 2x + 10 - 2x^2 - 4x + 6$$

4.)
$$(6x^5 + 2x^2 - 3x^3) + (x^4 + 3x^5 + 3x^2 + 2x^3 + 9)$$

$$9x^{5} + x^{4} + 5x^{2} + 9$$

$$2x^{4}-3x+1$$

6.)
$$(7x^5 - 2x^2 - 3x^3) - (2x^4 - x^5 - 3x^2 - 4x^3 + 5)$$

$$8x^{5}-2x^{4}+x^{3}+x^{2}-5$$

Be the teacher: Your mom is an Algebra teacher, and you are helping her grade papers. Correct this student's work: Classify the following polynomials. Name each polynomial and identify the degree and leading coefficient.

1) $7s - 3s^2 - 6$ 2) $5x^4 - 3x^6$ 3 $3x^4 + 5x^4$

1)
$$7s - 3s^2 - 6 - 35^2 + 73 - 6$$

Degree: 2

Leading Coefficient: 7 - 3

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

Tripomial Binomial

Degree: - 3 6th

Leading Coefficient: 6 - 3