Bell Ringer

Wednesday 9/11

Simplify each expression.

1. $\frac{3x^{\frac{3}{2}}}{1x^{\frac{1}{2}}}$

2. $\left(5a^{2}b^{\frac{1}{3}}\right)\left(2a^{\frac{1}{2}}b^{\frac{1}{3}}\right)$

3. $5x^{0}$

4. $\left(3x^{\frac{1}{2}}\right)^{4}$

$(5x)^0 = 1$

$= 5$

$3x^{\frac{3}{2}-\frac{1}{2}}$

$3x^{\frac{2}{2}}$

$3x$

$5 \cdot 2 \cdot a^{2} \cdot a^{\frac{1}{2}} \cdot b^{\frac{1}{3}} \cdot b^{\frac{1}{3}}$

$10a^{\frac{5}{2}}b^{\frac{2}{3}}$

$3^4 x^{\frac{4}{2}}$

$81x^2$

Essential Question

How can you classify, add and subtract polynomials?

POLYNOMIAL

* Sum of one or more monomials

# TERMS:	NAME:	EXAMPLE:
1	monomial	$4x^4$
2	binomial	$4x^4+7$
3	trinomial	$4x^4+7-5az^3$

Polynomial

Polynomial ← $4x^4+7-5az^3+b^2$

Classifying Polynomials

Monomial has one term

Binomial has two terms

Trinomial has three terms

Polynomial when it has more than three terms they are just called polynomials

Classifying by number of terms...

Monomial	Binomial	Trinomial	Polynomial
$14a^2$	$x + 1$	$1 + y^3 + y$	$x^2 - 3x^5 + x - 11$
$7x$	$2x - 6$	$6x^2 + 7x - 4$	$2xy + 9x + y - 8$
13	$13x^7 + 4x$		$2a + 3b - 4c + 5d - 6e + 7$
$-4xy^3$			

Classifying by Degree

* On a monomial, the degree is the sum (+) of all the exponents on the variables

7	$-8a^1$	$14y^2$	$2a^2b^6$	$x^1y^1z^1$
0	1	2	8	3

Find the degree of each **monomial.**

3 $-3x^4$ $7c^3d^2$

0 4 5

Find the degree of each **monomial.**

y	-20.5	$wxyz^5$
1	0	8

Standard Form...

Order terms from largest to smallest exponent on the variable

Ex:

$6x^8 - 7x^2 - 5x + 8$

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

coefficients constant

Classification of a Polynomial by Degree

The degree of a polynomial is the **largest exponent** on the variables

Degree	Name	Example
$n = 0$	constant	$3x^0$
$n = 1$	linear	$5x^1 + 4$
$n = 2$	quadratic	$-x^2 + 11x - 5$
$n = 3$	cubic	$4x^3 - x^2 + 2x - 3$
$n = 4$	quartic	$9x^4 + 3x^3 + 4x^2 - x + 1$
$n = 5$	quintic	$-2x^5 + 3x^4 - x^3 + 3x^2 - 2x + 6$

Write $15x - x^3 + 3$ in standard form, then find the following:

Standard Form: $-1x^3 + 15x + 3$

Degree: 3

Classify: Tri

Leading Coefficient: -1

Write $-3z^4$ in standard form then find the following:

Standard Form: $-3z^4$

Degree: 4

Classify: Mono

Leading Coefficient: -3

Write $4 + 5x^2 - x$ in standard form then identify the following:

Standard Form: $5x^2 - x + 4$

Degree: 2

Classify: Tri

Leading Coefficient: 5

Write $8q + q^5$ in standard form then identify the following:

Standard Form: $q^5 + 8q$

Degree: 5

Classify: Bi

Leading Coefficient: 1

Write $4 - 9z$ in standard form then identify the following:

Standard Form:

Degree:

Classify:

Leading Coefficient:

Write $t^2 - t^3 - 10t + 5$ in standard form then identify the following:

Standard Form: $-t^3 + t^2 - 10t + 5$

Degree: 3

Classify: Poly

Leading Coefficient: -1

Write $2.8x + x^3$ in standard form and identify the following

Standard Form: $x^3 + 2.8x$

Degree: 3

Classify: Bi

Leading Coefficient: 1

Find the sum.

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

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

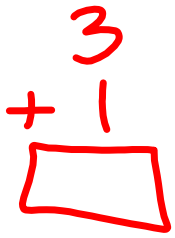
$2x^3 + x^3 - 5x^2 + 2x^2 + x - 1$

Find the sum.

$(3x^2 + 1x - 6) + (x^2 + 4x + 10)$

$1x^2 + 4x + 10$

$4x^2 + 5x + 4$



Find the difference.

$(p^2 + p + 3) - (-4p^2 - p + 3)$

$+4p^2+1p-3$

$5p^2+2p$

Find the difference.

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

$-3x^2+1x+8$

$x^2-2x+13$

Find the sum or difference.

$(x^2 - 1x - 2) + (7x^2 - x)$

$+ \; 7x^2 - 1x \quad \downarrow$

$8x^2 - 2x - 2$

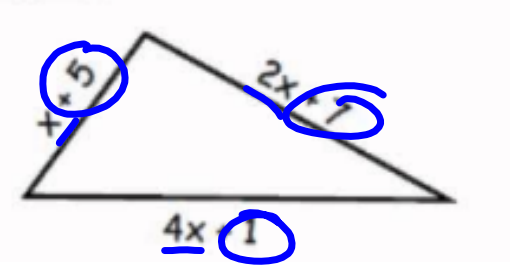
Find the sum or difference.

$(4n^2 + 5) - (-2n^2 + 2n - 4)$

Find the sum or difference.

$(-k + 5) - (3k^2 - 6)$

Write an expression that represents the perimeter of the triangle



$P = 7x + 13$

The cost (in dollars) of making x keychains is represented by 10 + 4x. The cost (in dollars) of making x necklaces is represented by 13 + 7x. Write a polynomial in standard form that represents how much more it costs to make x necklaces than x bracelets.

$$13+7x-(10+4x)$$
$$-10-4x$$
$$3+3x$$

2.1 hw pg 66-68 #s 1-15 odds, 21, 25, 29, 31, 37-49 odds, 55