Unit 2

Polynomial Operations and Factoring

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Classifying Polynomials

Degree

0 – Constant
1 – Linear
2 – Quadratic
3 – Cubic
4 – Quartic
5 – Quintic
* n – ; called the nth degree

Term

0 – N/A
1 – Monomial
2 – Binomial
3 – Trinomial
4 – Polynomial
5 – still polynomial

Classify Degree Term

a) $3x^3+2x^2-5$

Deg: 3

Terms: 3

Classify - Cubic Trinomial

b) x^2

deg: 2

term: 1

Quadratic monomial

c) $9x^4+2x^2$

deg: 4

terms: 2

Quartic Binomial

d) $5x^5-3x^4+2x^2+9x$

deg: 5

terms: 4

Quintic Polynomial

Adding Polynomials

add polynomials: combined like terms

y add the coefficient of the terms with the same exponent

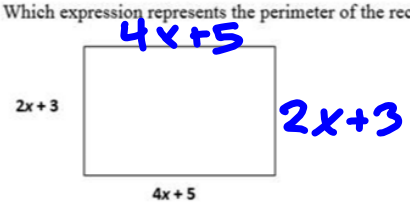
NOT CHANGE THE EXPONENT!!!

xample 1 $(3x^4-5x^3-10x+1)+(17x^4-3+x^3)$

$12x^4+4x^3-10x-2$

Word Problems

Which expression represents the perimeter of the rectangle?



$12x+16$

Subtracting Polynomials

subtract polynomials: Change the signs of all the terms after subtraction, drop the parenthesis, then add the polynomials

xample 2 $(9x^3-4+x^2+8x)-(7x^3-3x+7)$

$$9x^3+x^2+8x-4$$
$$+\ -7x^3\quad +3x-7$$
$$2x^3+x^2+11x-11$$

A rectangular field is (4x + 6) long and (3x + 4) wide.

a) How much greater is the length than the width?

$$(4x+6)-(3x+4)$$
$$-3x-4$$
$$x+2$$

Multiplying Polunomials

- multiply polynomials: Distribute each term. Multiply the efficients and [illegible] exponents.

example 3 $(3x-1)(2x^3+x^2-4x+7)$

$$6x^4+3x^3-12x^2+21x$$
$$-2x^3-x^2+4x-7$$
$$6x^4+x^3-13x^2+25x-7$$

$(x^2+x-12)(x-2)$

Find a polynomial expression for the volume of a rectangular prism with sides $(x-3),(x+4)$, and $(x-2)$.

Volume of a Rectangular Prism = Length x Width x Height

$(x-3)(x+4)$

$x^2+4x-3x-12$

$(x-2)(x^2+x-12)$

$$x^3+x^2-12x$$
$$-2x^2-2x+24$$
$$x^3-x^2-14x+24$$

1 or 3	Add
2 or 5	Subtract
4 or 6	mult.

Polynomial Game