

Warm-Up

10/16/17

Naming Polynomials

— highest
exponent

Name each polynomial by degree and number of terms.

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

Quartic
Binomial

2) $-10a^1$

Linear
Monomial

3) $2x^2$

Quadratic
Monomial

4) $-10k^2 + 7$

Quadratic
Binomial

5) $-5n^4 + 10n - 10$

Quartic
Trinomial

6) $-6a^4 + 10a^3$

Quartic
Binomial

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7) $6n$

Linear
Monomial

8) 1

Constant
Monomial

9) $-9n + 10$

Linear
Binomial

10) $5a^2 - 6a$

Quadratic
Binomial

11) $8p^5 - 5p^3 + 2p^2 - 7$

Quintic
Polynomial

12) $-7n^7 + 7n^4$

7th degree
Binomial

Essential Questions 10/16/17

1. How can I add Polynomials?
2. How can I subtract Polynomials?

Objective

I can add and subtract Polynomials.

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

Degree = 4 Quartic
Lead Coefficient = -2
Terms - 4 - Polynomial.

Algebra 1

Unit 1: Relationships between Quantities and Expressions.

Standards:

MGSE9-12.A.APR.1:

Add, subtract, and multiply polynomials; understand that polynomials form a system analogous (similar) to the integers in that they are closed under these operations

Guidelines for Adding, Subtracting, and Multiplying Polynomials

Adding Polynomials

Parentheses do not change the problem. Combine like terms – remember like terms have to have the same exponents – by adding the coefficients. Exponents do not change.

- Examples -

$$\begin{array}{r}
 (2x^2 - 4x + 4) + (-2x^2 - 5x + 4) = \\
 2x^2 - 4x + 4 \\
 -2x^2 - 5x + 4 \\
 \hline
 -9x + 8
 \end{array}$$

$$\begin{array}{r}
 (7x^3 + 6x^2 - 2x) + (9x^2 - 4x + 3) = \\
 7x^3 + 6x^2 - 2x \\
 \quad + 9x^2 - 4x + 3 \\
 \hline
 7x^3 + 15x^2 - 6x + 3
 \end{array}$$

Class Work - Adding Polynomials

1 - 5

1. $(5x^2 - 3x + 4) + (6x - 3x^2 - 3)$

$$\begin{array}{r} 5x^2 - 3x + 4 \\ -3x^2 + 6x - 3 \\ \hline 2x^2 + 3x + 1 \end{array}$$

$$\begin{array}{r} 2x^3 + 2x^2 + 3x^2 \\ \hline 2x^3 + 5x^2 \end{array}$$

$$2. (3x^2 + x + 8) + (x^2 - 9)$$

$$3x^2 + x + 8$$

$$x^2 + 0 - 9$$

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

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

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

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

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

$$4. (2m^2 + 3m - 4) + (m^2 - 3m - 2)$$

$$\begin{array}{r} 2m^2 + 3m - 4 \\ m^2 - 3m - 2 \\ \hline 3m^2 - 6 \end{array}$$

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

$$\begin{array}{r} 4x^3 + 6x^2 + 2x - 3 \\ + 3x^3 + 3x^2 + 5x - 5 \\ \hline 7x^3 + 9x^2 - 3x - 8 \end{array}$$



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



$$(2c^2 + 7c + 4) + (c^2 + 1 - 9c)$$

Guidelines for Adding, Subtracting, and Multiplying Polynomials

Subtracting Polynomials

All signs for each term must be switched in the set of parentheses that follow the subtraction sign. Then follow the rules for adding polynomials.

- Examples -

$$\begin{array}{r} (2x^2 - 4x + 4) - (-2x^2 - 5x + 4) = \\ 2x^2 - 4x + 4 \\ + 2x^2 + 5x - 4 \\ \hline 4x^2 + 1x \end{array}$$

$$4x^2 + x$$

$$\begin{array}{r} (7x^3 + 6x^2 - 2x) - (9x^2 - 4x + 3) = \\ 7x^3 + 6x^2 - 2x \\ - 9x^2 + 4x - 3 \\ \hline 7x^3 - 3x^2 + 2x - 3 \end{array}$$

Class Work 10/16/17**Subtracting Polynomials # 6 - 8**

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

$$\begin{array}{r} 3x^2 + 2x + 1 \\ - x^2 + 3x - 4 \\ \hline \end{array}$$

$$\boxed{2x^2 + 5x - 3}$$

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

$$\begin{array}{r} 2x^2 - 3x + 7 \\ - 5x^2 - 3x - 6 \\ \hline -3x^2 - 6x + 1 \end{array}$$

$$8. (7x^3 + 3x^2 + 4x + 10) - (10 + 8x + 3x^3)$$

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

$$10. (7x^3 - 9x^2 - 7x - 8) - (8 - 4x^2 - 6x^3)$$

Home Work 10/16/17

Naming Polynomials # 13 - 30

Adding Polynomials # 1 - 5

Subtracting Polynomials # 9, 10

Closing: Find the perimeter of the rectangle.

$$X + 5$$

