

Day 1 Notes (Distributing Review & Adding Polynomials)

Algebra 1

Day 1 – Review of Distributing and Polynomials

Learning Targets:

- I can simplify an expression using distribution.
- I can write a polynomial in standard form.
- I can add polynomials.

Review:

Simplify each expression by distributing and combining like terms.

1.) $5(a + 2y)$

$$5a + 10y$$

2.) $7(4x - 2b)$

$$28x - 14b$$

3.) $6(2x - 5)$

$$12x - 30$$

4.) $-3(4a - 2b)$

$$-12a + 6b$$

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

$$4x + 8y + 3x - 5y$$

$$7x + 3y$$

6.) $8x + 2(4x - 5y) - 2y$

$$8x + 8x - 10y - 2y$$

$$16x - 12y$$

7.) $5y - 2(y + 4) - 8 + y$

$$5y - 2y - 8 - 8 + y$$

$$4y - 16$$

8.) $5m - 3(2m - 6) + 8$

$$5m - 6m + 18 + 8$$

$$-1m + 26$$

$$-m + 26$$

Day 1 Notes (Distributing Review & Adding Polynomials)

Key terms and concepts:

A term is a number, a variable, or any product or quotient of numbers and variables.

A monomial is a single term, such as $5x$, $7x^2$, $4x^3$

A polynomial is a monomial or a sum of monomials, such as $(2x^2 + 3x + 4)$

A binomial is a polynomial with 2 unlike terms.

A trinomial is a polynomial with 3 unlike terms.

A **constant term** is a term with no variable parts.

Name the constant terms in $2x^2 - 3 + x + 5$ $-3, 5$

The **degree** of a polynomial is the largest exponent. The degree tells you how many solutions there are when trying to solve a polynomial equation.

State the degree of $9x^2 + x^4 - x$ Degree 4
 $x^4 + 9x^2 - x \rightarrow$ "Standard Form"

To write a polynomial in standard form: a) Combine all like terms and simplify
b) Write terms in descending order (exponents high to low)

Example: $2(3x - 4) - 3(4x^2 - 1)$
 $6x - 8 - 12x^2 + 3$
 $-12x^2 + 6x - 5$ \rightarrow "Standard Form" (Degree 2)
Constant

The leading coefficient of a polynomial is the coefficient of the term with the highest degree.

When written in standard form, this is the coefficient of the first term of the polynomial

Example: $6x^5 + 3x^4 + 2x^2 + x - 5$
Leading Coefficient
Degree: 5
Constant: -5

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Regents Questions:

- 1.) An expression of the fifth degree is written with a leading coefficient of seven and a constant of six. Which expression is correctly written for these conditions?

~~(1)~~ $6x^5 + x^4 + 7$

~~(3)~~ $6x^7 - x^5 + 5$

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

(4) $7x^5 + 2x^2 + 6$

- 2.) Write a polynomial expression of the third degree with a leading coefficient of 2 and a constant of 7.

$2x^3 + 7$

(terms w/ same variable and exponent).

Adding Polynomials: Just combine like terms!

Other words for add: combine, sum, total, increase

Perform the following operations and express your answers in standard form:

1.) $(6x^2 - 3x + 2) + (2x^2 - 8x - 4)$

$6x^2 - 3x + 2 + 2x^2 - 8x - 4$

$8x^2 - 11x - 2$

2.) $(4x^3 + 2x^2 - x + 9) + (7x^2 - 2x - 1)$

$4x^3 + 9x^2 - 3x + 8$

- 3.) If $A = (-3y^2 - 4y)$ and $B = (7y^2 + 2y - 4)$, then $A + B$ equals?

$(-3y^2 - 4y) + (7y^2 + 2y - 4)$

$4y^2 - 2y - 4$