

Sec. 5.3: Adding and Subtracting Polynomials

Learning Targets – day 2

1. Determining the “opposite” of a given expression.
2. Subtract polynomials horizontally by “adding the opposite”:
 - Create the opposite expression for the second polynomial
 - Drop the brackets
 - Group the like terms
 - Combine like terms
 - Write our answers in descending degree

Opposites:

What is the opposite of a number like 5?

What is the opposite of a number like -3?

What is the opposite of a monomial like $5x$?

What is the opposite of a monomial like $-3x$?

What is the opposite of a binomial like $5x + 4$?

What is the opposite of a binomial like $-3x - 2$?

What is the opposite of a trinomial like $2x^2 + 3x - 4$?

The process of forming the "opposite" of a polynomial requires that we take the original polynomial and _____:

- terms that had positive coefficients will have negative coefficients in the opposite expression
- terms that had negative coefficients will have positive coefficients in the opposite expression
- positive constants become negative constants in the opposite expression
- negative constants become positive constants in the opposite expression

You Try:

What is the opposite of each of these expressions:

(1) x

(2) $5 - 3x$

(3) $7x^2 - 5x + 1$

Mathematics 9

Unit 3: Introduction to Polynomials

Subtraction: It's the same as "adding the opposite"

With integers, suppose we wanted to calculate $8 - 15$

We can write this problem as _____ and it means the same thing and will give us the same answer: **-7**

We have changed "**subtracting 15**" into " _____ " (*adding the opposite of 15*).

Examples:

Subtract the polynomials horizontally by adding the opposite:

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

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

(3) $(-2a^2 - 4a + 1) - (-5a + 9)$

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Unit 3: Introduction to Polynomials

You Try:

Subtract the following polynomials horizontally by adding the opposite. Write your answer in descending degree:

$$(n^2 + 2n - 6) - (4n^2 - 2n + 1)$$

Check your understanding:

Worksheet 1: #2, 4, 5, 6, 9

Worksheet 2: #2, 4, 5, 6, 9

Text pg. 195 – 199, #10, 11, 14, 15, 21