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Multiplying Binomials

Unit 13 Lesson 7

MULTIPLYING BINOMIALS

Students will be able to:

Multiply 2 binomials using distributive property and exponent properties.

Key Vocabulary:

- Binomial
- Monomial
- Exponent property
- Distributive property

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Binomials can be multiplied by using **distributive property**, as shown in the example.

Example 1:

Multiply $(2x-3)(5x+4)$

- Distribute $2x$ to each term in the second expression and similarly -3 :

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

- Multiply: $10x^2 + 8x - 15x - 12$

- Add the like terms:

$$= \mathbf{10x^2 - 7x - 12}$$

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Sample Problem 1:

Multiply $(-2x+3)(3x+10)$

$$-2x(3x+10) + 3(3x+10)$$

$$= -6x^2 - 20x + 9x + 30$$

Adding the like terms:

$$= -6x^2 - 11x + 30$$

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Sample Problem 2:

Multiply $(5p+3)(3p-7)$

$$5p(3p-7) + 3(3p-7)$$

$$= 15p^2 - 35p + 9p - 21$$

Adding the like terms:

$$= \mathbf{15p^2 - 26p - 21}$$

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Sample Problem 3:

Multiply $(-9n^2+8)(6n^2+7)$

$$\begin{aligned} & -9n^2(6n^2+7) + 8(6n^2+7) \\ & = -54n^4 - 63n^2 + 48n^2 + 56 \end{aligned}$$

Adding the like terms:

$$= -54n^4 - 15n^2 + 56$$