NAME

Module 11 Simplifying Algebraic Expressions with Polynomials
Lesson 5 Multiplying Polynomials

guided notes

Lesson Objectives

- Use the Product of Conjugates pattern to find the product of two binomials.
- Use the Square of a Sum and Square of a Difference patterns to find the product of two binomials.
- Use horizontal and vertical methods to multiply polynomials using the Distributive Property.

For any expressions a and b, $(a + b)(a - b) =$ $a^2 - b^2$. This special product is called the Product of **Conjugates**.

1. Simplify: $(5 + r)(5 - r)$

   $25 - r^2$

For any expressions a and b, $(a + b)^2 =$ $a^2 + 2ab + b^2$. This special product is called the Square of a **Sum**.

For any expressions a and b, $(a - b)^2 =$ $a^2 - 2ab + b^2$. This special product is called the Square of a **Difference**.

2. Simplify: $(5y + 1)^2$

   $25y^2 + 10y + 1$

3. Simplify: $(m - 4n)^2$

   $m^2 - 8mn + 16n^2$