

Section 5.3: SPECIAL PRODUCTS

When you are done with your homework you should be able to...

- π Use FOIL in polynomial multiplication
- π Multiply the sum and difference of two terms
- π Find the square of a binomial sum
- π Find the square of a binomial difference

WARM-UP:

Multiply the following polynomials:

a. $(x-1)^2$

b. $(x-5)(x+5)$

THE PRODUCT OF TWO BINOMIALS: FOIL

F represents the _____ of the _____ terms in each _____, O represents the _____ of the _____ terms, I represents the _____ of the _____ terms, and L represents the _____ of the _____ terms.

USING THE FOIL METHOD TO MULTIPLY BINOMIALS

$$(ax + b)(cx + d) = \underline{\hspace{10cm}}$$

Example 1: Multiply using FOIL.

a. $(5x+3)(3x+8)$

b. $(x-10)(x+9)$

THE PRODUCT OF THE SUM AND DIFFERENCE OF TWO TERMS

$$(A+B)(A-B) = \underline{\hspace{10cm}}$$

The _____ of the _____ and the _____ of the _____ two terms is the _____ of the _____ the _____ of the second.

Example 2: Multiply.

a. $(x+4)(x-4)$

b. $(3x-7y)(3x+7y)$

THE SQUARE OF A BINOMIAL SUM

$$(A+B)^2 = \underline{\hspace{10cm}}$$

The _____ of a _____ is the _____ term _____ times the _____ of the terms _____ the last term _____.

Example 3: Multiply.

a. $(x + 6)^2$

b. $(x^2 + 9)^2$

THE SQUARE OF A BINOMIAL DIFFERENCE

$$(A - B)^2 = \underline{\hspace{10cm}}$$

The _____ of a _____ is the _____
term _____ times the _____ of the terms
_____ the last term _____.

Example 4: Multiply.

a. $(5x - y)^2$

b. $(x^3 - 11)^2$