5.5b Multiplying Binomials

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5.5b Multiplying Binomials
Math 9 Notes
Name_____

Recall, a binomial is a polynomial with 2 terms.

Using Algebra tiles a product of two binomials can be illustrated

	x	7
x	$(x)(x)$ x^2	$(x)(7)$ $7x$
2	$(2)(x)$ $2x$	$(2)(7)$ 14

Area = length x width
length = $x+7$
width = $x+2$

We can find the area of each smaller rectangle and add them together,

$$x^2+7x+2x+14$$
$$= x^2+9x+14$$

Therefore, $(x+7)(x+2) = x^2+7x+2x+14$
$= x^2+9x+14$

We can expand $(x+7)(x+2)$ using the distributive property.

There fore $(x+7)(x+2) = x(x+2)+7(x+2)$
$= x^2+2x+7x+14$
$= x^2+9x+14$

A way to remember this is called FOIL.

First, Outside, Inside, Last

Examples. Expand and simplify

1) $(x+8)(x+3)$

$= x^2+3x+8x+24$
$= x^2+11x+24$

2) $(3a-2)(a+4)$

$= 3a^2+12a-2a-8$
$= 3a^2+10a-8$

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3) $(x-7)(x-3)$

$= x^2 - 3x - 7x + 21$

$= x^2 - 10x + 21$

4) $5[(3+x)(2-x^2)]$

$5(6 - 3x^2 + 2x - x^3)$

$= 30 - 15x^2 + 10x - 5x^3$

$= -5x^3 - 15x^2 + 10x + 30$

5) $(3ab+c)(-2ab+3c)$

$= -6a^2b^2 + 9abc - 2abc + 3c^2$

$= -6a^2b^2 + 7abc + 3c^2$

Try this..... How do you think you would solve $(x+3)^2$? * then Assignment 5.5b worksheet

$(x+3)(x+3)$

$= x^2 + 6x + 9$

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