1. $(x + 3)(x + 4)$

$x(x) \quad x(4) \quad 3x \quad 3(4)$

$x^2 + 4x + 3x + 12$

$x^2 + 7x + 12$

2. $(x - 3)(x - 4)$

	x	-4
x	x^2	$-4x$
-3	$-3x$	$+12$

$x^2 - 7x + 12$

3. $(x + 3)(x - 4)$

$x(x) \quad x(-4) \quad 3(x) \quad 3(-4)$

$x^2 - 4x + 3x - 12$

$x^2 - x - 12$

4. $(x - 3)(x + 4)$

	x	-3
x	x^2	$-3x$
$+4$	$4x$	-12

$x^2 + x - 12$

Jan 11-8:53 AM

LT 4.3

I can translate quadratic equations from standard form INTO factored and vertex forms .

working backwards!

4.3B - Factoring Polynomials with a=1

Sep 10-3:04 PM

Factoring when a=1

Where are we going??

Before:

Multiply:

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

$$x^2 - 2x + 3x - 6$$

$$x^2 + x - 6$$

Now:

Factor:

$$x^2 + x - 6$$

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

Jan 17-10:59 AM

Factoring when a=1

$$ax^2 + bx + c$$

$$(x - a)(x - R)$$

FIRST term in trinomial comes from:

Multiplying the 1st terms in ()'s

LAST term in trinomial comes from:
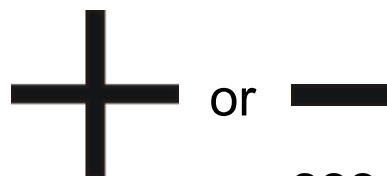
Multiplying the Last term in ()'s

MIDDLE term in trinomial comes from:

Mult End terms + Middle terms then combining them together

Jan 17-11:13 AM

2

Factoring when a=1

start with signs first!

$+$ or $-$

???

$$x^2 + 7x + 12 = (x \pm 3)(x \pm 4)$$

$$x^2 + x - 12 = (x - 3)(x \pm 4)$$

$$x^2 - 7x + 12 = (x - 3)(x - 4)$$

$$x^2 - x - 12 = (x \pm 3)(x - 4)$$

Nov 9-9:40 AM

Factoring when a=1

IF....

- last number positive
- factors have same sign

- last number negative

- factors have different signs

Nov 9-9:46 AM

3

Factoring when a=1

you try!

$$x^2 + 8x + 12 = (x + \underline{6})(x + \underline{2})$$

$x^2 + 2x + 6x$

$x^2 + 8x + 12$

12

12 | 12
1 | 12
2 | 6
3 | 4

$$x^2 + 8x + 16 = (x + \underline{4})(x + \underline{4})$$

$x^2 + 4x + 4x \quad 16$

$x^2 + 8x + 16$

16

16 | 16
1 | 16
2 | 8
4 | 4

$$x^2 + x - 6 = (x \underline{- 2})(x \underline{+ 3})$$

$x^2 + 3x - 2x \quad - 6$

$x^2 + x - 6$

6

6 | 6
1 | 6
3 | 2

Nov 9-9:49 AM

Factoring when a=1

$$x^2 + 7x + 10$$

Nov 9-9:22 AM

4

Factoring when a=1

$$x^2 - 4x - 45$$

$$(x + 5)(x - 9)$$

$$x^2 - 9x + 5x - 45$$

$$x^2 - 4x - 45$$

45
$9 \quad 5$
$1 \quad 45$
$3 \quad 15$

$x = 9$
$x = -5$

Dec 22-12:50 PM

$$x^2 + 12x + 20$$

$$(x + 2)(x + 10)$$

$$x^2 - 2x - 15$$

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

Dec 22-12:50 PM

$$x^2 + bx - 36$$

Find the value of B where that would make the expression factorable

$$\frac{36}{\begin{array}{c|c} 1 & 36 \\ 2 & 18 \\ 3 & 12 \\ 4 & 9 \\ 6 & 6 \end{array}}$$

$(x + 18)(x - 2)$

$x^2 - 2x + 18x \quad -36$

$16x$

Jan 17-7:58 AM

Change into Intercept Form:

$GCF = 3x$

$$y = 6x^2 + 21x$$

$Y = (3x)(2x + 7)$

$Y = (3x + 0)(2x + 7)$

Jan 17-10:12 AM

6

Sometimes you can start with the GCF!!

$$5x^2 + 10x + 5 = 5(x^2 + 2x + 1) = 5(x + 1)(x + 1)$$

$$x^2 + 2x + 1$$

$$(x + 1)(x + 1)$$

x-intercepts?

Sep 18-8:52 PM

factor completely!

$$3x^2 + 12x - 36$$

$$3(x^2 + 4x - 12)$$

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

Dec 22-12:51 PM

$$4x^2 + 48x - 112$$

$$4(x^2 + 12 - 28)$$

$$4(x + 14)(x - 2)$$

Jan 17-7:56 AM

4.3AB Homework

Pg 35 (11,15,19,21)
Pg 37 (1-13odd, 28)

date assigned: Tuesday

date due/HH: Friday

Dec 22-1:35 PM