

Tuesday, August 23rd, 2016

Warm-Up

Multiply:

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

binomial terms $2x^2 - 3x + 12x - 18$

$2x^2 + 9x - 18$

Agenda:
 -Warm-Up
 -Notes
 -Factoring Fun!
 -Knowledge Check

Feb 16-1:45 PM

Tuesday, August 23rd, 2016

Today, we are learning about...
Factoring Quadratics (Short/Long ABC Method)

Agenda:
 -Warm-Up
 -Notes
 -Factoring Fun!
 -Knowledge Check

Feb 10-7:52 AM

Factoring Trinomials:

To factor trinomials, find two integers, m and n , whose sum is equal to b and whose product is equal to the product of a and c .

- + Sum means: **addition**
- Product means: **multiply**

Factors: the numbers being multiplied.

Short abc: when $a=1$

Long abc: when $a>1$

$ax^2 + bx + c$

Feb 10-7:55 AM

Factor the trinomial.

I do: $x^2 + 7x + 10$

$a = 1$ $b = 7$ $c = 10$

| a·c | b |
|----------------|--------|
| Factors of: 10 | Sum: 7 |
| 1, 10 | |
| 2, 5 | 2, 5 |

$(x+2)(x+5)$

Check ✓ FOIL

$x^2 + 2x + 5x + 10$

$x^2 + 7x + 10$

Feb 10-7:58 AM

We do: $x^2 + x - 12$

$a = 1$ $b = 1$ $c = -12$

| a·c | b |
|-----------------|--------|
| Factors of: -12 | Sum: 1 |
| 1, 12 | |
| 2, 6 | |
| -3, 4 | -3, 4 |
| 4, 3 | |

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

Mar 9-8:59 AM

You do:

$x^2 + 3x - 18$

$a = 1$ $b = 3$ $c = -18$

| a·c | b |
|-----------------|--------|
| Factors of: -18 | Sum: 3 |
| 9, 2 | |
| 1, 18 | -3, 6 |
| 3, 6 | |

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

Mar 9-9:01 AM

Long abc: When a is not 1, we have to "split the middle term" and use grouping.

Remember to look for GCF first

$2x^2 - 3x - 20$
 $a = 2$ $b = -3$ $c = -20$

Factors of: -40 | Sum: -3

| | |
|-------|-------|
| 1, 40 | 5, -8 |
| 2, 20 | |
| 4, 10 | |
| 5, 8 | |

$(2x^2 - 8x) + (5x - 20)$
 $2x(x-4) + 5(x-4)$
 $(x-4)(2x+5)$

Mar 9-9:08 AM

$12y^2 + 10y - 12$

$a \cdot c$ b

Factors of: -36 | Sum: 5

| | |
|-------|-------|
| 3, 12 | -4, 9 |
| 6, 6 | |
| 4, 9 | |

$2(6y^2 + 5y - 6)$
 $a = 6$ $b = 5$ $c = -6$

$(6y^2 - 4y) + (9y - 6)$
 $2y(3y-2) + 3(3y-2)$
 $2(3y-2)(2y+3)$
 $(6y-4)(2y+3)$

Mar 9-9:09 AM

$3x^2 - 8x - 3$

$a = 3$ $b = -8$ $c = -3$

Factors of: -9 | Sum: -8

| | |
|------|-------|
| 3, 3 | -9, 1 |
| 9, 1 | |

$(3x^2 - 9x) + (x - 3)$
 $3x(x-3) + 1(x-3)$
 $(x-3)(3x+1)$

Mar 9-9:10 AM

Homework:

- $b^2 + 16b + 64$
- $n^2 - 4n + 24$
- $3x^2 - 8x + 4$
- $15y^2 - 27y - 6$
- $4x^2 - 46x + 22$
- $9k^2 + 66k + 21$
- $16k^2 + 60k - 100$
- $2x^2 - 2x + 40$

Aug 21-1:52 PM

Knowledge Check:

Factor the following quadratic:

$4n^2 - 8n + 3$

Don't forget your reflection statement!

Mar 7-8:07 AM