

Topic: Factoring Trinomials

Name: _____

What am I learning today?

Warm-Up:

Factor the following:

1) $9x^4y + 3x^2$
 $3x^2(3x^2y + 1)$

2) $40x^2 - 100x + 30x - 75$
GCF: 5
 $5(8x^2 - 20x + 6x - 15)$
 $4x(2x - 5) + 3(2x - 5)$
 $5(4x + 3)(2x - 5)$

Vocabulary

A trinomial is an expression that has 3 terms.

Standard Form

A quadratic is an expression with the largest exponent of x^2 .

Standard Form of a Quadratic

$f(x) = ax^2 + bx + c$

The expression must be in standard form before factoring!

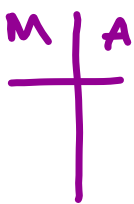
a is always the coefficient of x^2

b is always the coefficient of x

c is always the constant

Notes

Steps when Factoring



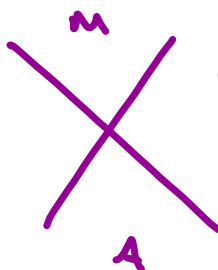
- 1: Check for a GCF and factor. If there is not a GCF then skip this step.
- 2: After the terms are put in standard form, identify a, b, and c.
- 3: Set up M-A chart.

M-A Chart

Our goal is to factor by grouping, so we need 4 terms.

M stands for "multiply" and A stands for "add."

We are looking for two numbers that multiply to $a \cdot c$ and add to b.



4: Split the (b) middle term using the numbers that satisfy the M-A chart.

5: Factor by grouping

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Examples
Setting up the M-A
Chart

1) $2x^2 + 17x + 35$

A = 2

B = 17

C = 35

$2x^2 + 10x + 7x + 35$

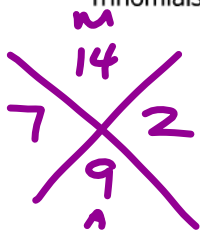
$M = \frac{a \cdot c}{b} = \frac{70}{17}$

$A = \frac{b}{17}$

$10 \cdot 7$

17

Examples
Factoring
Trinomials



Factor the following:

1) $x^2 + 9x + 14$

A = 1

B = 9

C = 14

$M = \frac{a \cdot c}{b} = \frac{14}{1}$

$A = \frac{b}{9}$

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

2) $x^2 + x - 2$

3) $3x^2 + 32x - 11$

$3x^2 + 33x - 1x - 11$

$M = \frac{a \cdot c}{b} = \frac{-33}{32}$

4) $4x^2 - 4x - 3$

Summary

Summarize the lesson in your own words