

1-2 Factoring Polynomials

Objectives:

1-2a: I can factor a polynomial by grouping.

1-2b: I can factor a trinomial.

Factor by Grouping.

Is there a GCF?

$$\underline{4x^2 + 6x} - \underline{2x - 3}$$

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

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

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

$$(x-3)$$

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

You're up!

$$9x^2 + 6x + 6x + 4$$

$$4x^2 - 8x + x - 2$$



Riddle...r me this...

What two numbers multiply to -12, but also add to -1?

-4, 3

What two numbers multiplies to 15 that also add to 8?

What two numbers multiply to -15 that also add to -2?

Factor the following polynomial by
grouping and the Riddler together.



~~$2x^2 + 6$~~

$$x^2 + \underline{2x} + \underline{1}$$

$$\begin{array}{c} \downarrow \quad | \quad \searrow \\ (x+1)(x+1) \end{array}$$

Factor the following trinomials.

$$x^2 + \underline{8x} + \underline{15}$$

$$3, 5$$

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

$$\del{3x^2 + 11x - 12}$$

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

How to Factor a Quadratic

Factoring quadratics in the form $ax^2 + bx + c$

1. Factor out the GCF
2. Multiply a and c
3. Find two factors of ac that add to b
 - *If ac is negative, factors must have opposite signs
 - *If ac is positive, factors must have same (+ or -) signs
4. Re-write equation with b split up into factors
5. Find the GCF by grouping
6. Factor the GCF of the whole

Other methods (optional per teacher)