

1-3 Factoring Polynomials

Objectives:

1-3a: I can completely factor binomial and trinomial expressions.

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

Completely factor the quadratic expression.

How is this different?

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$$2x^3 + 9x^2 + 4x$$

$$x(2x^2 + 9x + 4)$$

$$x(2x^2 + 8x + 1x + 4)$$

$$x(2x(x+4) + 1(x+4))$$

$$x(2x+1)(x+4)$$

Completely factor the quadratic expression.

$$x^3 + 6x^2 + 9x$$

$$x(x^2 + 6x + 9)$$



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

Always factor out a negative GCF if it is on the first term.

$$-2x^2 - 14x + 20$$

~~$$-2x^2 - 14x + 20$$~~

Hmmm...now what?

$$x^2 - 4$$

$$4x^2 - 9$$

$$x^2 + 0x - 4 \quad | \quad 4x^2 + 0x - 9$$

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

