1-2 Factoring Polynomials

Objectives:

1-2a: I can factor a polynomial expression by grouping.
1-2b: I can factor a trinomial.
1-1c: I can solve equations using factoring.

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Factor by Grouping.

Is there a GCF?

$$4x^2 + 6x - 2x - 3 \qquad\qquad x^3 - 3x^2 + x - 3$$

Aug 13-12:11 PM

You're up!

$$9x^2 + 6x + 6x + 4 \qquad\qquad 4x^2 - 8x + x - 2$$

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Riddle...r me this...

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

Jun 6-8:30 AM

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

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

Jun 6-8:35 AM

Factor the following polynomial by grouping and the Riddler together.

$$2x^2 - x - 6$$

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Factor the following trinomials.

$$x^2 + 8x + 15$$

$$3x^2 - 11x - 12$$

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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

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Other methods (optional per teacher)

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Solve the following equations.

$$(x-4)(x+7)=0 \qquad 3x(x+3)(x-1)=0$$

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You try:

$$(3x+1)(x-5)=0 \qquad 3(x+2)(x-3)=0$$

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Solve the following equations.

$$x^2 + 3x - 10 = 0$$

$$x^2 + x - 5 = -7$$

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You try:

$$x^2 + 11x + 24 = 0 \qquad x^2 - 7x + 27 = 5x$$

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Solve the following equations.

$$-3x^2 - 7x - 4 = 0$$

$$3x^2 + 12x - 63 = 0$$

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You try:

$$2x^2 - 13x - 7 = 0 \quad -6x^2 - 14x - 8 = 0$$

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