8-3

Solving Quadratics

Objective: I can solve quadratic equations by factoring and using the zero-product property.

I can write a quadratic equation given the zeros or x-intercepts

Vocabulary: Zeros/Roots, X-Intercepts, Zero-Product Propery, Solve,

What does it mean to "solve" an equation?

The Zero-Product Property

$$(?)(??)=0$$



If ab = 0, then a = 0 or b = 0 or both a and b are 0

Solve

$$(x + 5)(2x - 3) = 0$$

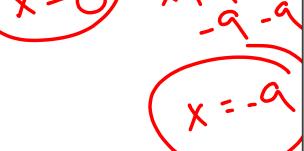
X+5=0 +x=-5

Your turn! Solve

$$(x - 1)(4x + 7) = 0$$

Solve

$$x(x+9)=0$$



4x+7=0 -7 -1

4x=7 x=7/4

Solve by factoring

Solve by factoring

$$x^2 + 10x + 15 = -6$$

$$x^2 - 5x + 4 = 4$$

The length of a rectangle is 8 feet more than its width. If the area of the rectangle is 84 square feet, what are the dimensions of the rectangle?

Try to solve by factoring...

$$x^2 - 2x - 24 = 0$$

What now?!

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$0 \times 1 + 0 \times + 0$$

Solve using the quadratic formula

$$3a^{2}(-)6a - .34 = 0 + (-6)^{2} - 4(3)$$

$$4n^2 + 11n = 15$$