6-3 Solving Quadratic Equations by Factoring

Alg 2

Remember Factoring???? ....It's BAAACK!

$$x^2 + 5x + 6 = 0$$

$$x^2 - 7x + 12 = 0$$

$$x^2 = 49$$

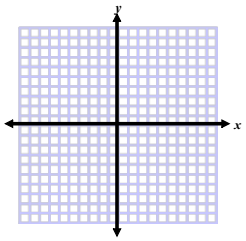
$$3x^2 + 5x + 2 = 0$$

Example 1 - 2 ROOTS

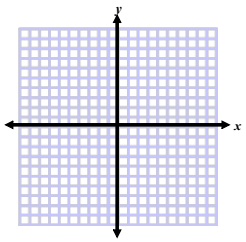
What are the roots?
What exactly are you finding?

Solve each equation by factoring

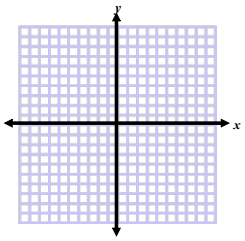
$x^2 = 6x$



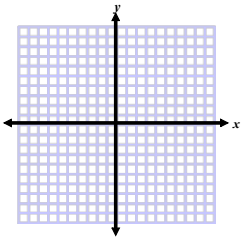
$x^2 = -4x$



$3x^2 = 5x + 2$



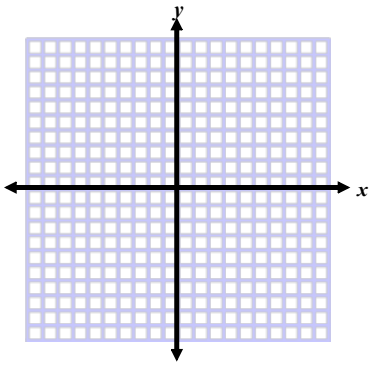
$2x^2 + 7x = 15$



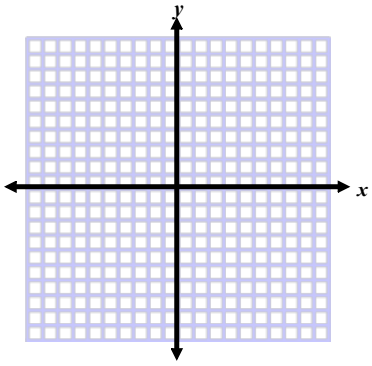
Example 2 - DOUBLE ROOT

What are the roots?
What exactly are you finding?

$$x^2 - 6x = -9$$



$$x^2 - 16x + 64 = 0$$



Example 4 - Write an Equation Given Roots

Write an equation with $\frac{1}{2}$ and *-5* as its roots.
Write the equation in $ax^2 + bx + c = 0$, where *a, b, c* are integers.

$\frac{1}{2}, \frac{-5}{1}$

$(2x-1)(x+5) = 0$

$2x^2 + 10x - 1x - 5 = 0$

$2x^2 + 9x - 5 = 0$

Write an equation with *-4* and *7* as its roots.
Write the equation in $ax^2 + bx + c = 0$, where *a, b, c* are integers.

$-\frac{4}{1}, \frac{7}{1}$ $(x+4)(x-7) = 0$

$x^2 - 7x + 4x - 28 = 0$

$x^2 - 3x - 28 = 0$

$\frac{0}{1}, \frac{3}{1}$

$(x-0)(x-3)=0$

$x^2-3x=0$

$-\frac{2}{3}, \frac{3}{4}$

$(3x+2)(4x-3)=0$

$12x^2-9x+8x-6=0$

$12x^2-x-6=0$

$$\frac{7}{1}$$

$$(x-7)(x-7)=0$$

$$x^2-7x-7x+49=0$$

$$x^2-14x+49=0$$