Warm up

Solve by factoring

$7x^2 + 8x + 1 = 0$

$7x^2+7x+1x+1$

$7x(x+1)\ 1(x+1$

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

$7x+1=0$ $\quad x+1=0$

$-1 \quad -1$

$\frac{7x}{7} = \frac{-1}{7}$ $\quad x=-1$

$x=.14$

Solve Using the Quadratic formula

$3x^2 + 4x - 5 = 0$

$x = \frac{-(4) \pm \sqrt{4^2-4(3)(-5)}}{2 \cdot 3=6}$

$-4+8.716 = .785$

$-4-8.716 = -2.11$

Please pull out HW and put it on your desk

Quiz

Solve by Factoring

1) $(4p + 5)(p - 2) = 0$

$4p + 5 = 0$
$-5 \quad -5$
$\frac{4p}{4} = \frac{-5}{4}$
$p = \frac{-5}{4}$
-1.25

$p - 2 = 0$
$+2 \quad +2$
$p = 2$

2) $v^2 - 2v - 15 = 0$

$v - 5 = 0$
$v = 5$ ✗

$v + 3 = 0$
$-3 \quad -3$
$v = -3$ ✗

1	−5
1	3

$1 \cdot -15$
$3 \cdot -5$
$3 + -5 = -2$

4-4 Quadratic Formula with Imaginary Numbers

Objective: I can solve quadratic equations that have imaginary roots using the Quadratic Formula.

What kind of number is it if we get a negative inside the radical?

$$\frac{4 \pm \sqrt{-24}}{6} = \frac{4 \pm 2i\sqrt{6}}{6} = \frac{2 \pm i\sqrt{6}}{3}$$

$64 = 32 \cdot 2$

When we use the Quadratic Formula, we can get numbers that have both real and imaginary parts.

REMEMBER TO SIMPLIFY!

Solve using the Quadratic Formula.

$x^2 - 4x = -13$

x^2

$a = 1$

$b = -4$

$c = 13$

$+13$

$13 + x^2 - 4x = 0$

$16 - 52$

$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(13)}}{2(1)}$

$x = \frac{4 \pm \sqrt{-36}}{2}$

$x = \frac{4 \pm 6i}{2} = 2 \pm 3i$

$x^2 + x + 5 = 0$

$a = 1$

$b = 1$

$c = 5$

$x = \frac{-(1) \pm \sqrt{1^2 - 4(1)(5)}}{2(1)}$

$x = \frac{-1 \pm \sqrt{-19}}{2}$

$x = \frac{-1 \pm i\sqrt{19}}{2}$

How many solution(s) did we end up with?

What kind of solution(s) are they?