

## Bell Ringer

Tuesday 12/17

**Factor Completely**

1.  $75x^2 - 48$

$$3(25x^2 - 16)$$

$$3(5x + 4)(5x - 4)$$

**Solve**

3.  $7x^2 + 28 = 0$

$$7x^2 = -28$$

$$\sqrt{7x^2} = \sqrt{-28}$$

$$\sqrt{x^2} = \sqrt{-4}$$

$$x = \pm 2i$$

2.  $3x^3 + 2x^2 - 12x - 8$

$$x^2(3x + 2) - 4(3x + 2)$$

$$(3x + 2)(x^2 - 4)$$

$$(3x + 2)(x + 2)(x - 2)$$

4.  $x^2 + 2x + 3 = 0$

$$x = \frac{-2 \pm \sqrt{2^2 - 4(1)(3)}}{2(1)}$$

$$\frac{-2 \pm \sqrt{-8}}{2}$$

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

4.8 online hw due today

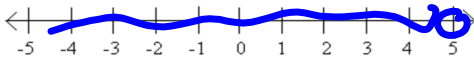
Week #4 Packet due today - hand in

Standards 4D and 4E Opportunity 1 Thursday

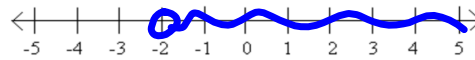
## Review...

Graph each inequality.

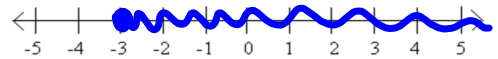
1.  $x < 5$



2.  $y > -2$



3.  $y \geq -3$



## **Essential Question**

How can you solve a quadratic inequality?

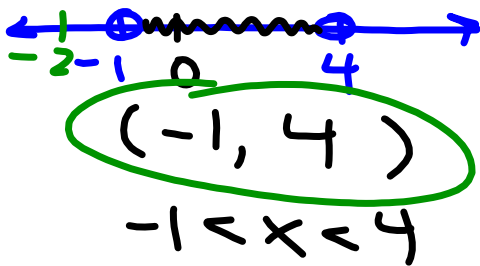
Solve the inequality algebraically.

$$x^2 - 3x - 4 < 0$$

$$0^2 - 3(0) - 4 < 0$$

$$-4 < 0$$

$$b < 0$$



Set equation equal to zero.

Find x-intercepts and put on number line.

Test values to determine solutions

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

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

$$x = 4 \quad x = -1$$

Solve the inequality algebraically.

$$(2x + 4)(x - 1) \leq 0$$

$$(4x - 1) - 4 \leq 0$$



$$[-2, 1]$$

$$-2 \leq x \leq 1$$

Set equation equal to zero.

Find x-intercepts and put on number line

Test values to determine solutions

$$(2x + 4)(x - 1) = 0$$

$$2x + 4 = 0 \quad x - 1 = 0$$

$$\frac{-4}{2} \quad \frac{-4}{2} \quad x = 1$$

$$x = -2$$

Solve the inequality algebraically.

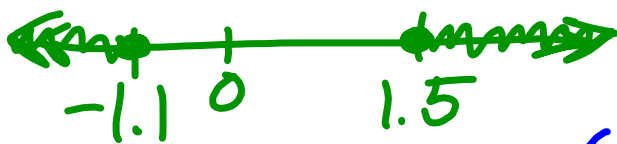
$$3x^2 - x - 5 \geq 0$$

~~-5 = 0~~

Set equation equal to zero.

Find x-intercepts and put on number line.

Test values to determine solutions



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

$$(-\infty, -1.1] \cup \frac{-(-1) \pm \sqrt{(-1)^2 - 4(3)(-5)}}{2(3)}$$

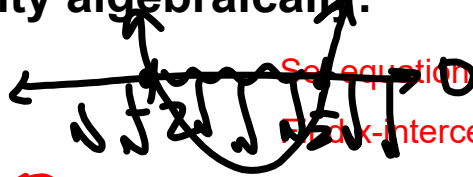
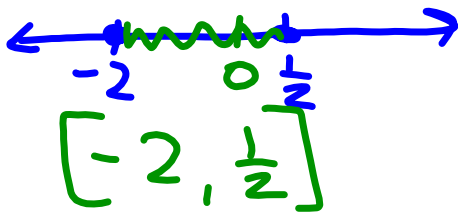
$$[1.5, \infty) \quad x = 1.5 \quad x = -1.1$$

Solve the inequality algebraically.

$$2x^2 + 3x \leq 2$$

$$0 \leq 2$$

$$2x^2 + 3x - 2 \leq 0$$



Set equation equal to zero.

Find x-intercepts and put on number line.

Test values to determine solutions

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

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

$$x = \frac{-3 \pm \sqrt{25}}{4} = \frac{-3 \pm 5}{4}$$

$$\frac{2}{4} = \frac{1}{2}, -\frac{2}{4} = -\frac{1}{2}$$



**Solve the inequality algebraically.**

$$-3x^2 - 4x + 1 < 0$$

Set equation equal to zero.

Find x-intercepts and put on number line.

Test values to determine solutions

**Solve the inequality algebraically.**

$$2x^2 + 2 > -5x$$

Set equation equal to zero.

Find x-intercepts and put on number line.

Test values to determine solutions

4.9 online hw pg 265 #s 27-38  
(different than what's on packet...)

