

# Bell Ringer

Wednesday 12/18

Simplify

1.  $(3+2i)(3-2i)$

$$9 - \cancel{6i} + \cancel{6i} - 4i^2$$

$$9 - 4(-1)$$

$$9 + 4 = 13$$

3.  $(2-5i)(3+i)$

	2	-5i
3	6	-15i
+i	2i	5i <sup>2</sup>

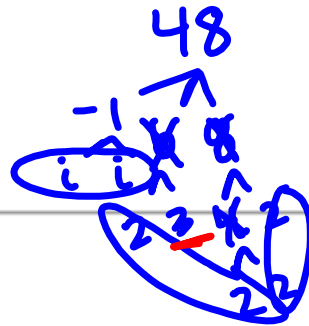
$$11 - 13i$$

2.  $(4-6i) - (-1+2i)$

$$\frac{+1-2i}{5-8i}$$

4.  $\sqrt{-48}$

$$4i\sqrt{3}$$



Update Bell Ringer Score on Packet!

4.8 Day 2 online hw due today!

4.9 online hw due tomorrow

4D and 4E Standards Review due tomorrow

Standards 4D and 4E Opportunity 1 tomorrow!

Solve the inequality algebraically

$$x^2 + 10x + 9 > 0 \quad a > 0$$

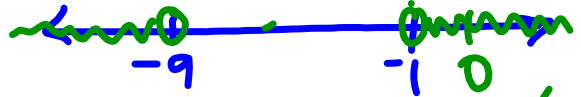
$$x^2 + 10x + 9 = 0$$

$$(x+1)(x+9) = 0$$

$$x+1=0 \quad x+9=0$$

$$x=-1 \quad x=-9$$

9  
1 9



$$(-\infty, -9) \cup (-1, \infty)$$

Solve the inequality algebraically

$$(3x - 1)(x + 4) \geq 0 \quad -4 \geq 0$$

$$(3x - 1)(x + 4) = 0$$

$$3x - 1 = 0 \quad x + 4 = 0$$

$$\frac{3x}{3} = \frac{1}{3} \quad x = -4$$

$$x = \frac{1}{3}$$



$$(-\infty, -4] \cup \left[\frac{1}{3}, \infty\right)$$

Solve the inequality algebraically

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

$$13. \begin{cases} y = x^2 + 3x + 2 \\ -3x + y = 3 + 3x \end{cases}$$

$$y = 3x + 3$$

$$x^2 + 3x + 2 = 3x + 3$$

$$x^2 - x = 0$$

$$x^2 = \sqrt{1}$$

$$x = \pm 1$$

$$(1, 6)$$

$$(-1, 0)$$

**due tomorrow - key online      cross off #16****Review: Standard 4D Complex Numbers and 4E Systems of Equations**

Name: \_\_\_\_\_ Hr: \_\_\_\_\_

**Write each expression in simplest form.**

1.  $(4 - 2i) + (2 + 3i)$

2.  $(2 - i) - (4 + 5i)$

3.  $(2 - i)(6 + 5i)$

4.  $(4 - 5i)(4 + 5i)$

**Write each expression in simplest form.**

5.  $\sqrt{-100}$

6.  $\sqrt{-192}$

**Solve. Circle your solutions as well as show all work.**

7.  $x^2 - 7x = 8$

8.  $2x^2 - x + 4 = 0$

9.  $x^2 + 5 = -3x$

10.  $3x^2 - 16 = -7$

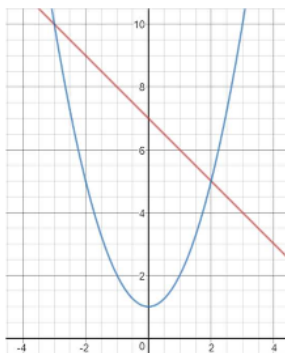
11.  $2x^2 + 10 = -18$



Solve each system of equations.

$$12. \begin{cases} y = -x + 7 \\ y = x^2 + 1 \end{cases}$$

$$13. \begin{cases} y = x^2 + 3x + 2 \\ -3x + y = 3 \end{cases}$$



$$14. \begin{cases} y = x^2 \\ y - 8 = -x^2 \end{cases}$$

$$15. \begin{cases} y = 12 - 6x \\ x^2 + y = 4 \end{cases}$$

$$16. \begin{cases} x^2 + y^2 = 25 \\ x + y = 7 \end{cases}$$