

Bell Work

$$1) \sqrt{4} = 2$$

$$2) \sqrt{64} = 8$$

$$3) \sqrt[6]{8} = 2\sqrt{2} \quad \text{"6th Root"}$$

$$\sqrt{4 \cdot 2} =$$

$$\sqrt{4 \cdot \sqrt{2}} =$$

$$\boxed{2\sqrt{2}}$$

$$\sqrt[6]{\quad}$$

$$4) \sqrt[3]{8} = 2$$

$$2 \cdot 2 \cdot 2 = 8$$

# Complex and Imaginary Numbers:

$$\sqrt{4} = 2$$

$$\sqrt{2 \cdot 2} = 2$$

$$2 \cdot 2 = 4$$

$$(-2)(-2) = 4$$

$$\sqrt{-4}$$

Imaginary Numbers ~~(-2)(2)~~

$$\sqrt{-4} = \sqrt{-1 \cdot 4} = \sqrt{-1} \sqrt{4}$$

$i$  = Imaginary Number  $2\sqrt{-1}$

$$i^2 = -1$$

$$i \neq -1$$

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

$$2i$$

Adding/Subtracting/Mult/Div

Treat "i" like a variable.

$$2i + 3i = 5i$$

$$\frac{3i}{2i} = \frac{3}{2}$$

$$\pi r^2$$

$$3.14 \dots$$

$$e = 2.7$$

$$(2i)(3i) = 6i^2 = 6(-1) = -6$$

$$(2x)(3x) = 6x^2$$

Convert  $i^2$  to  $-1$

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

F.O.I.L.

$$= 6 + 10i + 9i + 15i^2$$

$$6 + 19i + 15(-1)$$

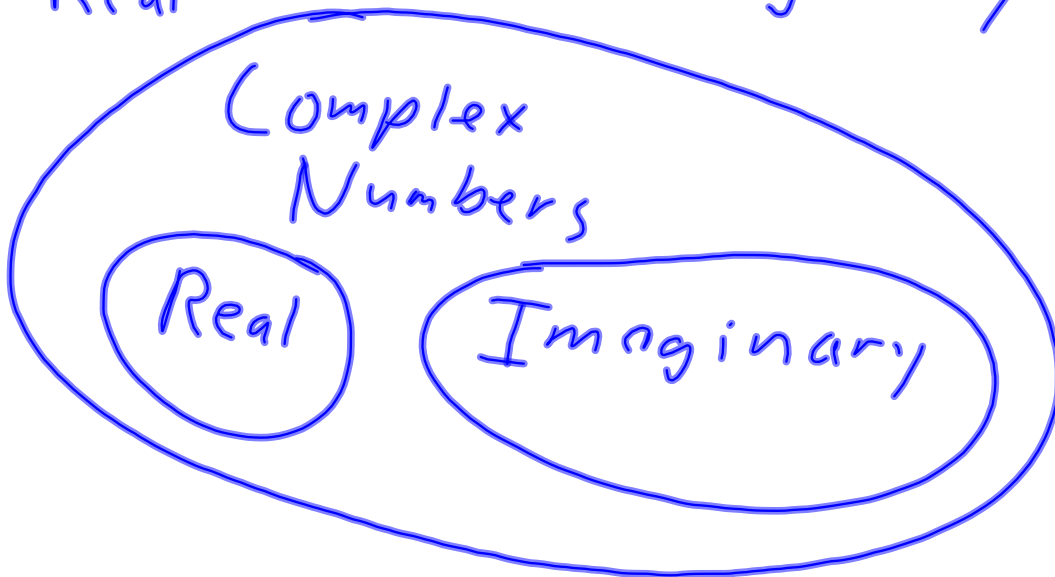
$$6 + 19i - 15$$

$$-9 + 19i$$

# Complex Numbers

$$3 + 5i$$

Real  $\rightarrow$   $3$   $+$   $5i$   $\leftarrow$  imaginary



Plotting Complex Numbers. imaginary

$$2 + 3i$$

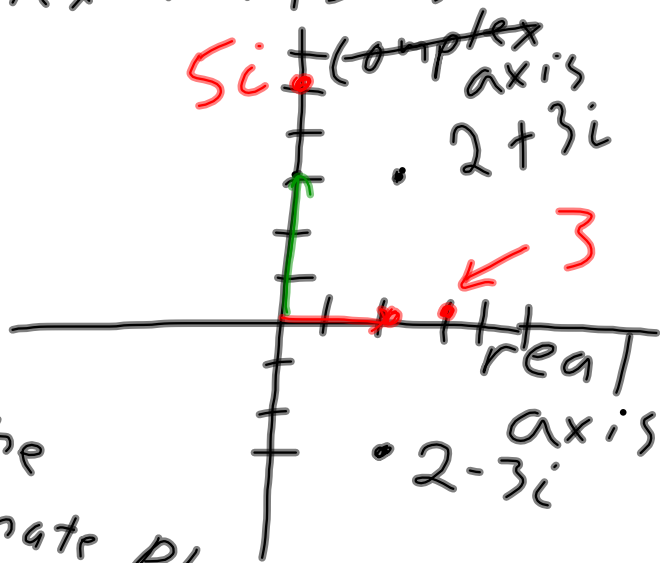
$$(2, 3)$$

$$2 - 3i$$

$$3$$

$$5i$$

← for the X-Y Coordinate Plane



Worksheet Alg 2A Nov 16<sup>th</sup>

Simplify

1)  $\sqrt{-100}$

2)  $\sqrt{-2}$

3)  $\sqrt{-36}$

4)  $3i + 5i$

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

6)  $3(2+3i)$

7)  $3(2-5i)$

8)  $6i(2+4i)$

9)  $(4+5i)(3+4i)$

Plot:

10)  $2+3i$

11)  $-5+4i$

12)  $6$

13)  $-3i$