Precalculus

2-01 Complex Numbers

Imaginary Unit

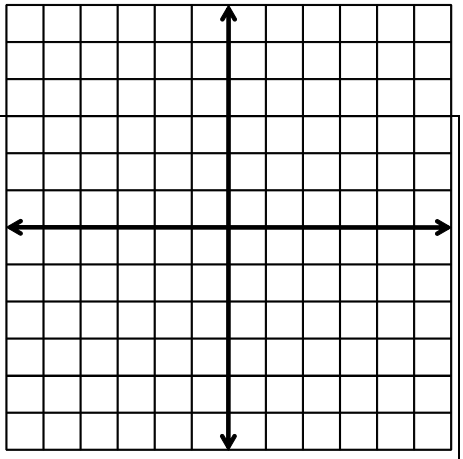
- $i =$_____
- $i^2 =$_____

Complex Number

- $a + bi$
- a is _____ part
- bi is _____ part

Graphing complex points

- Complex plane
- Horizontal axis = _____
- Vertical axis = _____



Graph

a. $3 + 2i$

b. $-2 - 4i$

Operations

Add/Subtract

- _____ like terms

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

Multiplication

- i^2 becomes _____

$(2 + 3i)(6 - 7i)$

$(3 + i)(3 - i)$

Complex Conjugates

- $a + bi$ and _____
- When complex conjugates are _____, the product is _____

Division

- Multiply by conjugate of denominator

$\frac{2-3i}{4+6i}$

Simplify $(5-i)^2$

$\sqrt{-14}\sqrt{-2}$

$\sqrt{-27}-\sqrt{-12}$