

What are they?

A complex number is expressed as

$a + bi$ , where  $i$  is an

"imaginary number".

ex:  $2 + 3i$

real      imaginary

But what is  $i$ ?  
 $i = \sqrt{-1} \Rightarrow$

ex:  $4 - 2i$

real

imaginary

$i^2 = (\sqrt{-1})^2$   
 $i^2 = -1$

# Complex Numbers

① drop the parentheses

② Identify/combine real parts

③ Identify/combine imaginary

\* Similar to combining like terms

ex:  $(6 + 2i) + (8 + 3i)$

$6 + 2i + 8 + 3i$

$14 + 5i$

Real: 14

Imaginary: 5

- ① Distribute the negative
- ② Same as adding complex numbers!

ex:  $(4 - 2i) - (3 - 4i)$

$4 - 2i - 3 + 4i$

$1 + 2i$

Real: 1

Imaginary: 2

Multiplication

Subtraction