

Part 1: Complex Numbers

Imaginary Number: a number combined with the value “ i ”, defined as –

$$i = \sqrt{-1}$$

When the square root to a negative number is to be found, take the square root of the number and then replace the negative sign with “ i ”

Ex.) $\sqrt{-81} \rightarrow \sqrt{81}i \rightarrow 9i$

Ex.) $\sqrt{-60} \rightarrow \sqrt{60}i \rightarrow 2i\sqrt{15}$

(Note: Usually the “ $+$ ” is used with the root, but unless the number is the solution to an equation, use the positive only.)

Complex Number: a combination number with the following format:

$$a + bi$$

‘ a ’: the real number ‘ b ’: the imaginary number

Ex.) $3 + 7i \rightarrow$ ‘ 3 ’: real ‘ $7i$ ’: imaginary

Part 2: Combining Complex Numbers