

Chapter **5**

COMPLEX NUMBERS

Square root of a negative real number:

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

For example, $\sqrt{-4} = \sqrt{(4)(-1)} = \sqrt{4} \sqrt{-1} = 2i$

Note:

$$\sqrt{ab} \neq \sqrt{a}\sqrt{b}, \text{ if } a \text{ and } b \text{ are both negative.}$$

For example,

$$\sqrt{-7} \times \sqrt{-8} ?$$

$$= \sqrt{(7)(-1)} \times \sqrt{(-8)(-1)}$$

$$= \sqrt{7i} \times \sqrt{8i}$$

$$= i^2 \sqrt{7} \times \sqrt{8} = -\sqrt{56} = -2\sqrt{14}$$

Brainbox
 learn easy