TOPIC: INTRODUCTION TO RADICALS
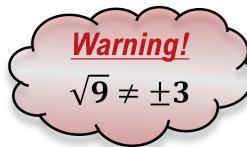
Introduction to Square Roots

◆ The _____ of squaring a number is taking the square root.

▶ Positive real numbers always have TWO roots: A _____ ("principal") and a _____ root.

Square Roots
( )² $\nearrow$ $\searrow$ 9 $\searrow$ $\nearrow$ ( )² $\sqrt{9} =$ ___ $\sqrt{9} =$ ___	$\searrow$ $\nearrow$ −9 $\sqrt{-9} =$ _____ Negative #s _____ be square rooted!

Radical Symbol $\begin{cases} \sqrt{} \text{ means positive root;} \\ -\sqrt{} \text{ means negative root;} \\ \pm\sqrt{} \text{ means means both} \end{cases}$

Radicand: Term inside the radical

Warning! $\sqrt{9} \neq \pm 3$

MEMORY TOOL
Negatives _____ side $\sqrt{} \rightarrow$ __kay
Negatives _____ side $\sqrt{} \rightarrow$ __maginary

EXAMPLE: Evaluate the radicals.

(A)
$\sqrt{36}$

(B)
$-\sqrt{36}$

(C)
$\sqrt{-36}$

PRACTICE   Evaluate the radical.

$\sqrt{(-5)^2}$

TOPIC: INTRODUCTION TO RADICALS

Extract the following square roots.

(**A**)

$$\sqrt{144}$$

(**B**)

$$-\sqrt{121}$$

Determine if the following square roots evaluate to a real number.

(**A**)

$$-\sqrt{4}$$

[REAL | NOT REAL]

(**B**)

$$\sqrt{64}$$

[REAL | NOT REAL]

(**C**)

$$-\sqrt{-25}$$

[REAL | NOT REAL]