

NTH ROOT OF A NUMBER



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nth ROOT

If $a \in \mathbb{R}$, $n \in \mathbb{N} \Rightarrow$

$$\overset{\text{Index}}{\underset{\text{Radical}}{n}} \sqrt{\underset{\text{Radicand}}{a}} = \underset{\text{Root}}{x} \quad \longleftrightarrow$$

$x \cdot x \cdot x \dots$ "n" times = a

The base "a" results from multiplying "x", "n" times.

EXAMPLE: Perform the following operations:

DEFINITION: $\sqrt{a} = x \longleftrightarrow x \cdot x = a$

$$\sqrt{4} = 2 \checkmark \longleftrightarrow \underline{2} \times \underline{2} = 4$$

"2" times

DEFINITION: $\sqrt[3]{a} = x \longleftrightarrow x \cdot x \cdot x = a$

$$\sqrt[3]{8} = 2 \checkmark \longleftrightarrow \underline{2} \times \underline{2} \times \underline{2} = 8$$

"3" times



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