

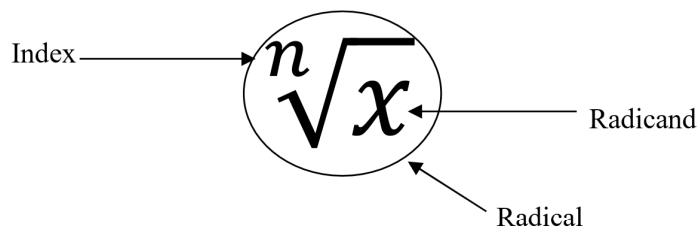
L1 Estimating Roots

Tuesday, September 6, 2022 6:55 PM



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Lesson 1 Estimating Roots



Example 1

Use mental math to calculate each root.

a) $\sqrt{144} = 12$

b) $\sqrt[3]{-64} = -4$

c) $\sqrt{\underbrace{3 \cdot 3}_9 \cdot \underbrace{3 \cdot 3}_9} = 9$

d) $\sqrt[3]{2^6} = 4$
 $\sqrt[3]{(2 \cdot 2)(2 \cdot 2)(2 \cdot 2)}$

Example 2

Estimate

a) $\sqrt{30}$

$\sqrt{25} \quad \sqrt{30} \quad \sqrt{36}$
 $5 \quad \leftarrow \text{closer} \quad 6$
 ≈ 5.4

b) $\sqrt[3]{20}$

$\sqrt[3]{8} \quad \sqrt[3]{20} \quad \sqrt[3]{27}$
 $2 \quad \xrightarrow{\text{closer to}} \quad 3$
 ≈ 2.7

$1^2 = 1$

$2^2 = 4$

$3^2 = 9$

$4^2 = 16$

$5^2 = 25$

$6^2 = 36$

$1^3 = 1$

$2^3 = 8$

$3^3 = 27$