Square roots and cube roots: meanings and signs

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Worked example 1

Find all square roots of 81.

Guided attempt 2

Evaluate $\sqrt[3]{-64}$.

1. Find r with $r^3 = -64$; its sign is ____.
2. Complete $(-\square)^3 = -64$.
3. Therefore $\sqrt[3]{-64} = \square$; cube it to check.

Prerequisite 3

Evaluate $\sqrt{49}$.

Prerequisite 4

Evaluate $\sqrt{0}$.

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Independent practice 5

Evaluate $\sqrt{\frac{25}{36}}$.

Independent practice 6

Find all square roots of $\frac{9}{100}$.

Independent practice 7

Evaluate $\sqrt[3]{\frac{-27}{125}}$.

Independent practice 8

Evaluate $\sqrt{(-8)^2}$. Explain why the result is not -8.

Exit question 9

Does -9 have a real square root?

A. Yes, -3.

B. Yes, both 3 and -3.

C. No; a real square cannot be negative.

Exit question 10

Evaluate $\sqrt[3]{-8}$.