

Lesson 5: Square Roots and Cube Roots

Goal:

- Determine the square root and cube root of a number

The **radical** symbol, $\sqrt{\quad}$, is used to represent the root of a number. The number placed under the radical sign is known as the "**radicand**".

The most common radical we solve for are "square root" and "cube root": *The square root of a number is the number that when multiplied by itself returns to the original number.* For example,

$$\begin{array}{l} \sqrt{4} = 2 \\ \text{Because} \\ 2 \times 2 = 4 \end{array}$$

The cube root of a number is the number that when multiplied by itself three times returns to the original number.

$$\begin{array}{l} \sqrt[3]{8} = 2 \\ \text{Because} \\ 2 \times 2 \times 2 = 8 \end{array}$$

Example 1 Determine the square root of the following numbers.

a) $576 = \sqrt{576} = 24$

b) $324 = \sqrt{324} = 18$

Example 2: Determine the cube root of the following numbers.

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

b) $1000 = \sqrt[3]{1000} = 10$