

## CHAPTER 07

## Cubes and Cube Roots

**Cube root of product of integers:**

The cube root of the product of any two integers 'a' and 'b' is,

$$\sqrt[3]{a \times b} = \sqrt[3]{a} \times \sqrt[3]{b}$$

**Example:**

$$\sqrt[3]{9261} = \sqrt[3]{27 \times 343} = \sqrt[3]{27} \times \sqrt[3]{343} = 3 \times 7 = 21$$

Note: It is true only if 'a' and 'b' are independently cubes.

**Cube root of a rational number:**

The cube root of a rational number  $\frac{a}{b}$ ,  $b \neq 0$  is,

$$\sqrt[3]{\frac{a}{b}} = \frac{\sqrt[3]{a}}{\sqrt[3]{b}}, \text{ where } a \text{ \& } b \text{ are integers.}$$

**Example:**

$$\sqrt[3]{\frac{8}{125}} = \frac{\sqrt[3]{8}}{\sqrt[3]{125}} = \frac{2}{5} \left( \left( \frac{2}{5} \right)^3 = \frac{2^3}{5^3} = \frac{8}{125} \right)$$