Cubes

Understanding the Concept

- A cube of a number is the number multiplied by itself three times
- If a is a number then its cube is $a \times a \times a = a^3$

Example $2^3 = 2 \times 2 \times 2 = 8$

- Cubes can be positive or negative depending on the sign of the number
- Cube is used in finding volumes of cubes and many real-life applications

Important Points

- Cube of a positive number is positive
- Cube of a negative number is negative
- Cube of any even number is even and cube of any odd number is odd
- Some small cubes to remember are 1, 8, 27, 64, 125, 216, 343, 512, 729, 1000
- Cube of a number grows very quickly compared to its square

Examples with Solutions

Example Easy Level

➢ Find the cube of 5

Solution: $5^3 = 5 \times 5 \times 5 = 125$

Example Easy Level

Find the cube of (-3)

Solution: $(-3)^3 = (-3) \times (-3) \times (-3) = -27$

Example Moderate Level

Find the cube of 7

Solution: 7³ = 7 × 7 × 7 = 343

Example Moderate Level

Find the cube of -6

Solution: $(-6)^3 = (-6) \times (-6) \times (-6) = -216$

Example Word Problem

Volume of a cube is given by side³ Find the volume of a cube with side 4 cm

Solution: Volume = $4^3 = 4 \times 4 \times 4 = 64$ cubic centimeters

Summary Points

- Cube of a number = number × number × number.
- Cube of positive number is positive cube of negative number is negative.
- Cube of even number is even cube of odd number is odd.
- Important small cubes must be remembered.
- Cubes are used in volume calculations and advanced mathematics.