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### Cubes and cube Roots

**Cube:** When the number is multiplied by itself three times, the product obtained is known as cube of that number.

For example: Cube of 4

$$4 \times 4 \times 4 = 64$$

**Cube of a fraction:**

Find the cube of  $\frac{3}{7}$

$$3 \times 3 \times 3 / 7 \times 7 \times 7 = 27/343$$

**Note :** "Cube of a negative number is always negative".

**Properties of a cube:**

- 1) Cube of an even number is always even.
- 2) Cube of an odd number is always odd.
- 3) Cube of numbers ending with 1,4,5,6 are the numbers which end with the same digits.
- 4) Cube of a number ending with 2 and 8 is the number which ends with 8 and 2.
- 5) Cube of a number ending with 3 and 7 is the number which ends with 7 and 3.

**Perfect cube:** A natural number "a" is a perfect cube if there exists another natural number "b" whose cube is "a" i.e  $a = b^3$

**Methods of finding cube root:**

1) Prime Factorisation

**Step 1:** Resolve the given number into prime factors.

**Step 2:** Group the same factors by triplets.

**Step 3:** Take one factor from each group of triplets formed in step 2.

**Step 4:** Find the product of all the factors obtained in step 3. The product so obtained is the cube root of the given number.