

## CHAPTER 07

# Cubes and Cube Roots

### Methods for finding the cube roots:

(I) Using unit digit method (For perfect cube numbers)

(II) Prime factorization method

### Using unit digit method (For perfect cube members):

**Example:** Find the cube root of 185, 193.

#### Step (1):

Look at the digit at the unit's place and determine at the unit's place in the cube root by using the table given in properties of cubes of numbers.

The unit of digit of 1, 85,193 is 3. We find that the cube root of with 3 in the ones place has 7 in its ones place. Thus the cube of 185, 193 has 7 in the ones place.

#### Step (2):

Divide the number into groups of three digits starting from the right. If no digit(s) is (are) left, then the digit obtained in Step (1) is the required cube root. Otherwise, go the next step.

Group 185, 193; two groups are 185 & 193.

**Step (3):**

Consider the number left from step II ( $2^{\text{nd}}$  group). Find the largest single digit cube is less than or equal to this left over number. This number is the ten's digit of the cube root.

In the number 185, 193 the second group of three digits from the right is 185, which lies between the cubes of 5 and 6 that is between 125 and 216. The smaller of 5 and 6 is 5, is the ten digit of the cube root of 185193.

**Step (4):**

Obtain the required cube root by forming a number whose unit digit is the number obtained in step I and ten's digit is the number obtained in Step (3).

Therefore, the cube root of 185193 is 57.

