## Chapter 03 Number Play

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## MINDMAP

1. Numbers

   • Whole Numbers – 0, 1, 2, 3, ...

   • Natural Numbers – 1, 2, 3, ...

   • Even Numbers – divisible by 2 (e.g., 2, 4, 6)

   Odd Numbers – not divisible by 2 (e.g., 1, 3, 5)

2. Place Value & Face Value

   Place Value = digit × place (e.g., in 5432, place value of 4 = 4 × 100 = 400)

   Face Value = digit itself (e.g., face value of 4 = 4)

3. Comparing Numbers

   • Compare digit by digit from left

   • Greater number has more digits or higher leftmost digit

4. Ascending & Descending Order

   Ascending – smallest to largest (e.g., 23, 45, 67)

   Descending – largest to smallest (e.g., 67, 45, 23)

5. Roman Numerals

   • I = 1, V = 5, X = 10, L = 50, C = 100

   Rules:

   – Add when smaller numeral is after larger (VI = 5+1 = 6)

   – Subtract when smaller numeral is before larger (IV = 5–1 = 4)

   – No symbol repeated more than 3 times

6. Estimation

   Rounding off to nearest 10, 100, 1000 e.g. 87 → 90 (nearest 10)

   e.g., 764 → 800 (nearest 100)

7. Use of Brackets

   Simplify expressions using **BODMAS**

   e.g., 5 × (3 + 2) = 5 × 5 = 25

8. Large Numbers

Indian System: Ones, Tens, Hundreds, Thousands, Ten Thousands, Lakhs, Ten Lakhs, Crores

International System: Ones, Tens, Hundreds, Thousands, Ten Thousands, Hundred Thousands, Millions

9. Patterns in Numbers

   Recognize and extend patterns

   e.g., 5, 10, 15, 20 → next is 25

## NOTES WITH RELEVANT EXAMPLES

1. Whole Numbers start from 0.
   Example: 0, 1, 2, 3, ..., 100
2. Even numbers end with 0, 2, 4, 6, 8.
   Example: 24, 100, 1026
3. Odd numbers end with 1, 3, 5, 7, 9.
   Example: 33, 201, 985
4. Place Value vs Face Value
   In 6789:
   – Place value of 7 = 7 × 100 = 700
   – Face value of 7 = 7
5. Comparing 5432 and 5429 → 5432 > 5429 (since 3 > 2 at tens place)
6. Ascending order of 304, 43, 5002 → 43, 304, 5002
   Descending order → 5002, 304, 43
7. Roman Numerals
   – 9 = IX, 14 = XIV, 40 = XL, 90 = XC
8. Rounding off
   – 4567 to nearest 100 → 4600
   – 12345 to nearest 1000 → 12000
9. BODMAS Example
   12 ÷ (4 – 1) + 2 × 3
   = 12 ÷ 3 + 6
   = 4 + 6 = 10
10. Indian vs International
    – 25,67,890 (Indian) = Twenty-five lakh sixty-seven thousand eight hundred ninety
    – 2,567,890 (International) = Two million five hundred sixty-seven thousand eight hundred ninety

## UNIT TEST

1. Write the smallest 4-digit number using digits 2, 0, 5, 7 without repetition.
2. Is 3456 an even or odd number? Justify.
3. Find the face value and place value of 6 in 86420.
4. Arrange in ascending order: 9087, 987, 90087, 9870.
5. Write the Roman numeral for 39.
6. Round off 7845 to the nearest 100.
7. Simplify: 18 – (6 + 2) ÷ 2 × 3
8. Write the number 45,67,892 in words using the Indian system.
9. Identify the pattern and write the next two numbers: 7, 14, 21, __, __
10. Write the greatest 5-digit number using digits 3, 0, 1, 8, 6 without repetition.

## WORKSHEET

### Fill in the blanks:

**1.** a) The face value of 9 in 19023 is _____.

b) The Roman numeral for 45 is _____.

c) The smallest even number is _____.

2. Write the following in descending order: 5050, 5500, 5005, 5550.

c) Round off 18923 to:

a) Nearest 10

b) Nearest 100

3. c) Nearest 1000

Convert the following Roman numerals to numbers:

a) LXXV

4. b) XCIV
5. Write the place value of each digit in 30405.

Using the digits 2, 4, 6, 8 (each only once), form:

a) The greatest 4-digit number

6. b) The smallest 4-digit number
7. Simplify using BODMAS:
   20 ÷ 4 + 3 × (5 – 2)
8. Write the next three numbers in the pattern:
   100, 95, 90, __, __, __
9. Write 87,65,432 in International system with commas.
10. Is 0 a natural number? Give reason.

## SOLUTIONS – UNIT TEST

1. Smallest 4-digit number using 2,0,5,7 → 2057
   (0 cannot be first)
2. 3456 is even because it ends with 6 (an even digit).
3. Face value of 6 = 6
   Place value of 6 = 6 × 1000 = 6000
4. Ascending order: 987, 9087, 9870, 90087
5. 39 = XXXIX
6. 7845 → nearest 100 = 7800
   (since 45 < 50)
7. 18 – (6 + 2) ÷ 2 × 3
   = 18 – 8 ÷ 2 × 3
   = 18 – 4 × 3
   = 18 – 12 = 6
8. 45,67,892 = Forty-five lakh sixty-seven thousand eight hundred ninety-two
9. Pattern: multiples of 7 → next two: 28, 35
10. Greatest 5-digit number using 3,0,1,8,6 → 86310

## SOLUTIONS – WORKSHEET

1. a) 9
   b) XLV
   c) 2
2. Descending order: 5550, 5500, 5050, 5005
3. a) 18920
   b) 18900
   c) 19000
4. a) LXXV = 75
   b) XCIV = 94
5. Place values in 30405:
   – 3 → 30000
   – 0 → 0 (thousands)
   – 4 → 400
   – 0 → 0 (tens)
   – 5 → 5
6. a) Greatest = 8642
   b) Smallest = 2468
7. 20 ÷ 4 + 3 × (5 – 2)
   = 5 + 3 × 3
   = 5 + 9 = 14
8. Pattern decreases by 5 → 85, 80, 75
9. 8,765,432
10. No, 0 is not a natural number. Natural numbers start from 1.