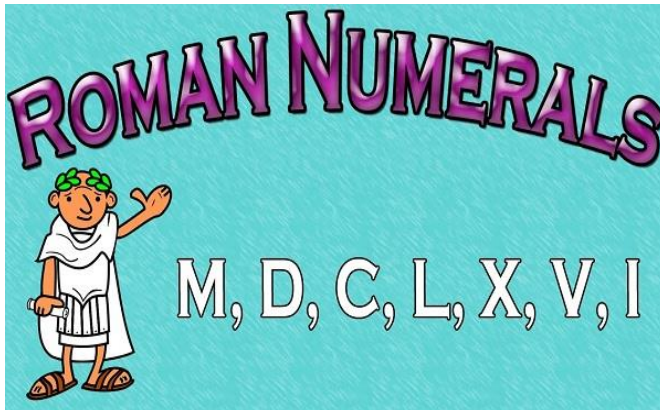


## Chapter- 3

# Roman Numerals

**STUDY NOTES****LEARN ABOUT:**

- INTRODUCTION OF ROMAN NUMERALS
- RULES FOR READING ROMAN NUMERALS

**❖ INTRODUCTION OF ROMAN NUMERALS-**

The Roman numeral system is the most ancient and a popular form of writing numbers. It was developed by the Roman thousands of years ago.

In this system, 7 letters of the alphabet are used to represent the numbers. The 7 letters along with their corresponding numeric value are given in the table below.

LETTER	NUMERIC VALUE
I	1
V	5
X	10
L	50
C	100
D	500

<b>M</b>	<b>1000</b>
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**(Note: There is no letter to represent 'zero' in the Roman number system.)**

Nowadays, Roman numbers are used to number the faces of clocks, to list important topics in outlines, etc.

All the numbers are written using either a single letter or a combination of different letters.

### ❖ RULES FOR READING ROMAN NUMERALS-

<b>I</b>	<b>V</b>	<b>X</b>	<b>L</b>	<b>C</b>	<b>D</b>	<b>M</b>
1	5	10	50	100	500	1000

The rules for making numbers with these numerals are as follows:

- 1 The numerals should be written in order of size, with the biggest first.
- 2 The same numeral cannot be written more than three times in a row.
- 3 Writing a numeral after a bigger numeral means 'add it on'.  
(VII means  $5 + 1 + 1 = 7$  and XIII means  $10 + 1 + 1 + 1 = 13$ )
- 4 Writing a numeral before a bigger numeral means 'subtract it'.  
(IV means  $5 - 1 = 4$  and IX means  $10 - 1 = 9$ )
- 5 I can be used before V and X.
- 6 X can be used before L and C.
- 7 C can be used before D and M.



#### RULE-1

If a symbol is repeated more than one time, then we add its numeric value that many times.

9 in Roman Numerals



What is the Value of 9 in Roman Numeral?



#### EXAMPLES-

$$II = 1 + 1 = 2$$

$$III = 1 + 1 + 1 = 3$$

$$XX = 10 + 10 = 20$$

$$XXX = 10 + 10 + 10 = 30$$

**(Note: 1. Only letters I, X, C and M can be repeated. Letters V, L, and D are never repeated. 10 is not written as VV. To represent 10, we write X.  
2. A symbol cannot be repeated more than 3 times in a row. For representing 3, III is acceptable. But for writing 4, we will not use IIII. Similarly, 40 cannot be written as XXXX.)**

### RULE-2

When a letter having smaller value is written to the right of letter having greater value, add the numeric value of the smaller letter to the numeric value of the greater letter.

### EXAMPLES-

$$VI = V + I = 5 + 1 = 6$$

$$XI = X + I = 10 + 1 = 11$$

$$LI = L + I = 50 + 1 = 51$$

$$CI = C + I = 100 + 1 = 101$$

$$XV = X + V = 10 + 5 = 15$$

$$XXV = X + X + V = 10 + 10 + 5 = 25$$

$$XXXV = X + X + X + V = 10 + 10 + 10 + 5 = 35$$

$$LX = L + X = 50 + 10 = 60$$

$$LXV = L + X + V = 50 + 10 + 5 = 65$$

### RULE-3

When a letter having smaller value is written to the left of a letter having greater value, subtract the numeric value of the smaller letter from that of the greater letter.

### EXAMPLES-

$$IV = 5 - 1 = 4$$

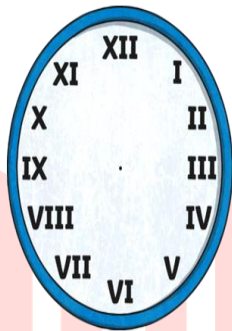
$$IX = 10 - 1 = 9$$

$$XL = 50 - 10 = 40$$

XXX	10+10+10	30
III	1+1+1	3

	Right	Wrong
50	L	XXXXX
400	CD	CCCC

## ❖ NUMBERS 1 TO 30



1 - I	11 - XI	21 - XXI
2 - II	12 - XII	22 - XXII
3 - III	13 - XIII	23 - XXIII
4 - IV	14 - XIV	24 - XXIV
5 - V	15 - XV	25 - XXV
6 - VI	16 - XVI	26 - XXVI
7 - VII	17 - XVII	27 - XXVII
8 - VIII	18 - XVIII	28 - XXVIII
9 - IX	19 - XIX	29 - XXIX
10 - X	20 - XX	30 - XXX

**Mind Map:**

