



Learning Objectives

At the end of this lesson, students will be able to:

- Identify the Roman numbers.
- Convert the Hindu-Arabics numbers to Roman numbers.



Warm-Up

Let's revise

Have you ever noticed these symbols in the clock?



What time is it? _____



Teacher's Note:

Use the actual clock and show the roman numbers to the students.



People in Ancient India developed ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 to represent all numbers.

Arabs spread them to other countries. Therefore, the number formed by these digits are known as **Hindu-Arabic numbers** or **International numbers**.



Facts to Know

The Roman number system was developed by the Romans thousands of years ago.

They used only 7 symbols to write numbers.

These symbols are:

I, V, X, L, C, D and M. Each letter has its own different value.



Roman Symbols	I	V	X	L	C	D	M
Value	1	5	10	50	100	500	1000



Roman numbers have
no symbol for zero.



Note: In this class, we will discuss the usage of three symbols: I, V and X.



Rules For Writing Roman Numerals



Quick Tip

The only symbols I and X can be repeated to form a number.

No symbol can be repeated more than 3 times.

Symbol V is never repeated.

Rule 1 : Repetition of a roman number means addition.

Examples

$$\text{II} = 1 + 1 = 2$$

$$\text{III} = 1 + 1 + 1 = 3$$

$$\text{XX} = 10 + 10 = 20$$

$$\text{XXX} = 10 + 10 + 10 = 30$$

Rule 2 : When a smaller number is written on the right of a larger number, we add smaller to the larger one.

Examples

$$\text{VI} = 5 + 1 = 6$$

$$\text{VII} = 5 + 1 + 1 = 7$$

$$\text{XII} = 10 + 1 + 1 = 12$$

$$\text{XXII} = 10 + 10 + 1 + 1 = 22$$

$$\text{XXV} = 10 + 10 + 5 = 25$$



Rule 3 : When a smaller number is written on the left of a larger number, we subtract smaller from the larger one.

Examples

$$IV = 5 - 1 = 4$$

$$IX = 10 - 1 = 9$$



Roman Numbers Table

Hindu-Arabic Numerals	Roman Numerals	Hindu-Arabic Numerals	Roman Numerals	Hindu-Arabic Numerals	Roman Numerals
1	I	15	XV	29	XXIX
2	II	16	XVI	30	XXX
3	III	17	XVII	31	XXXI
4	IV	18	XVIII	32	XXXII
5	V	19	XIX	33	XXXIII
6	VI	20	XX	34	XXXIV
7	VII	21	XXI	35	XXXV
8	VIII	22	XXII	36	XXXVI
9	IX	23	XXIII	37	XXXVII
10	X	24	XXIV	38	XXXVIII
11	XI	25	XXV	39	XXXIX
12	XII	26	XXVI	40	XL
13	XIII	27	XXVII		
14	XIV	28	XXVIII		



Since we cannot repeat X more than 3 times, so we cannot write 40 as XXXX.

So, we write, $40 = 50 - 10 = XL$

$40 = XL$

exercise 3.1

1. Match the following:

S. No.	Hindu-Arabic Numerals	Roman Numerals
(a)	5	XII
(b)	9	XXVII
(c)	15	V
(d)	12	XXXIII
(e)	25	IX
(f)	33	XV
(g)	27	XVI
(h)	20	XXXVIII
(i)	16	XX
(j)	38	XXV



2. Write the Roman numerals for the following:

- | | | | |
|--------|-------|--------|-------|
| (a) 4 | ..... | (b) 29 | ..... |
| (c) 6 | ..... | (d) 10 | ..... |
| (e) 17 | ..... | (f) 36 | ..... |

3. Write the Hindu-Arabic numerals for the following:

- | | | | |
|---------|-------|----------|-------|
| (a) XX | ..... | (b) IX | ..... |
| (c) XIV | ..... | (d) XXIV | ..... |
| (e) IV | ..... | (f) XXIX | ..... |

4. Which of the following are meaningless? Mark (×) or (✓).

- (a) XIIX (b) XXXI
 (c) XXIX (d) VX
 (e) XVII (f) XXIVV

5. Fill in the placeholders with the correct sign (> or <):

- (a) XXVI XXIV (b) X XI
 (c) XX XXXIV (d) XXV XXIV
 (e) IX XII (f) IV VI

6. Solve the following and write the answer in Hindu-Arabic numerals:

- (a) XI + XI = ... (b) XI - XI = ...
 (c) XXX + XX = ... (d) XXX - XX = ...
 (e) XXI + X = ... (f) XXII - XI = ...

7. Draw the minute hand and hour hand to show the time given below:



5 o'clock



Quarter past 4



Quarter to 8



Half past 10





Think Wisely

Arrange the following roman number in ascending order:

XX

XXVI

VI

XXV

XXII



Mental Maths

A. Tick (✓) the correct answer:

1. Roman numeral for 50 is

i. L

☐

ii. X

☐

iii. C

☐

2. XXII represents

i. 22

☐

ii. 32

☐

iii. 52

☐

3. 40 is written as

i. VIII

☐

ii. XL

☐

iii. XXXV

☐

B. Fill in the blanks with Hindu-Arabic numerals.

1. $V + \underline{\hspace{2cm}} = \underline{\text{VIII}}$

2. $VI + \underline{\hspace{2cm}} = \underline{X}$

3. $XXV - \underline{\hspace{2cm}} = \underline{IX}$

4. $VII + \underline{\hspace{2cm}} = \underline{XV}$

5. $XXX - \underline{\hspace{2cm}} = \underline{XVIII}$

6. $XVIII - \underline{\hspace{2cm}} = \underline{X}$



Maths Lab Activity

Materials required: Paper sheet with pencil.

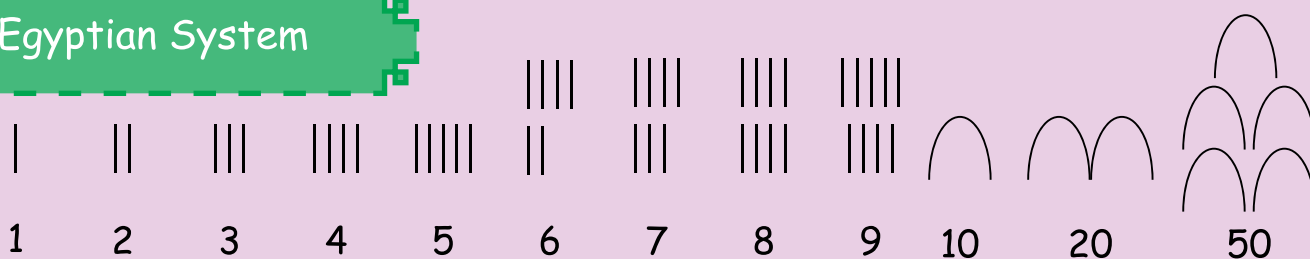
Steps:

1. Divide the class into groups of 4-5 students.
2. Ask the students about the Hindu Arabic and Roman Numerals. Discuss the differences between the two numerals:

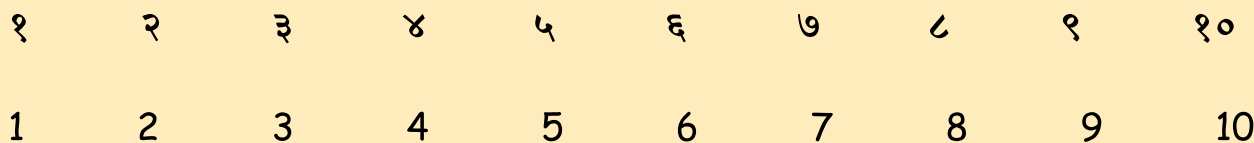
The Hindu - Arabic numeral system is based on place values, while the roman system uses combinations of symbols to depict a number.

3. Also share and discuss various other number systems such as.

Egyptian System



Hindi System



4. Now let the students work in groups and create their system of numbers. They should be encouraged to create a symbol for each digit and give each digit and the number a unique name.

