ONLINE CLASS

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LESSON
PART 3

2 ROMAN NUMERALS

A. Write the following numbers in Hindu–Arabic numerals.

1. XVI   2. LX   3. XC   4. XXIX

B. Write the following numbers in Roman-form.

1. 36   2. 89   3. 58   4. 76

We have already learnt that the Roman empire used different symbols for counting numbers. The Romans used seven different symbols in various combinations according to a set of rules. Roman numerals have been passed down through the centuries and are used even today.

There are seven basic Roman numerals. These are : **I V X L C D M**

The ten basic Indo-Arabic numerals are : **1, 2, 3, 4, 5, 6, 7, 8, 9, 0**

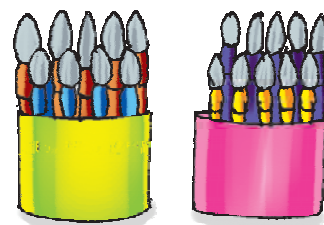Some basic Roman numerals and their Indo-Arabic equivalents are :

Roman Numerals	I	V	X	L	C	D	M
Indo-Arabic Values	1	5	10	50	100	500	1000

RULES FOR WRITING ROMAN NUMERALS

We follow some basic rules for writing Roman numerals. These are :

Rule 1 : The 7 basic symbols can be used in different combinations involving addition or subtraction to form numbers.

Example : II   =   1 + 1   = 2

XX =   10 + 10   = 20

IV   =   5 – 1   = 4 (I is on the left)

Rule 2 : Symbols I, X, C, M can be repeated 3 times at any one given time. Symbols V, L, D can be used only once at any one instance.

Example : III   =   1 + 1 + 1 = 3

16

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$$XXX \quad = \quad 10 + 10 + 10 = 30$$
$$CCC \quad = \quad 100 + 100 + 100 = 300$$
$$MMM \quad = \quad 1000 + 1000 + 1000 = 3000$$

Only I, X, C are used for both addition and subtraction.

Rule 3 : **When the smaller symbol is placed on the right of the bigger symbol, then we add the symbols.**

Example : $XI \quad = \quad 10 + 1 = 11$
$$CX \quad = \quad 100 + 10 \;\, = 110$$
$$MC \quad = \quad 1000 + 100 = 1100$$

Rule 4 : **When the smaller symbol is placed on left of the bigger symbol, then we subtract.**

Example : $IX \quad = \quad 10 - 1 = 9$
$$XC \quad = \quad 100 - 10 = 90$$
$$CM \quad = \quad 1000 - 100 = 900$$

Rule 5 : **Symbol I can be added to or subtracted from the next two symbols V, X only.**

Example : $IV \quad = \quad 5 - 1 = 4$
$$VI \quad = \quad 5 + 1 = 6$$
$$IX \quad = \quad 10 - 1 = 9$$
$$XI \quad = \quad 10 + 1 = 11$$

Rule 6 : **Symbol X can be added to or subtracted from the next two symbols L, C only.**

Example : $XL \quad = \quad 50 - 10 = 40$
$$LX \quad = \quad 50 + 10 = 60$$
$$XC \quad = \quad 100 - 10 = 90$$
$$CX \quad = \quad 100 + 10 = 110$$

Rule 7 : **Symbol C can be added or subtracted from the next two symbols D, M only.**

Example : $CD \quad = \quad 500 - 100 = 400$
$$DC \quad = \quad 500 + 100 = 600$$
$$CM \quad = \quad 1000 - 100 = 900$$
$$MC \quad = \quad 1000 + 100 = 1100$$

Exercise 2.1

A. Write the Roman numerals for the following.

1. 30 = ⬡ 2. 45 = ⬡ 3. 200 = ⬡

4. 310 = ⬡ 5. 11 = ⬡ 6. 71 = ⬡

7. 500 = ⬡ 8. 24 = ⬡ 9. 55 = ⬡

10. 46 = ⬡ 11. 1200 = ⬡ 12. 350 = ⬡

B. Write the Indo-Arabic numerals for the following.

1. DCL = ⬡ 2. XXII = ⬡ 3. XLI = ⬡

4. LXXV = ⬡ 5. XC = ⬡ 6. XXXIV = ⬡

7. XCIX = ⬡ 8. MMMD = ⬡ 9. CCCIX = ⬡

10. LVI = ⬡ 11. MCCIV = ⬡ 12. CDXXII = ⬡

C. Find out the answers for the following.

1. Is XCV lesser or greater than 90 ?

2. Is DL lesser or greater than 595 ?

3. Is DCCIX lesser or greater than 700 ?

4. Is CDLXX lesser or greater than 525 ?

5. Is LXVI lesser or greater than 60 ?

6. Is CCXL lesser or greater than 210 ?

READING LARGER ROMAN NUMERALS

To understand bigger Roman numerals, we follow the rules and break the number up like this :

Example : Write CMLXXXII in Indo-Arabic numerals.

Step 1 : CM + LXXX + II

18

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Step 2 : CM = 1000 – 100 = 900

Step 3 : LXXX = 50 + 10 + 10 + 10 = 80

Step 4 : II = 1 + 1 = 2

Therefore, CMLXXXII = 900 + 80 + 2 = 982

Exercise 2.2

A. Write the Indo-Arabic numerals for the following.

1. MCMXLIV

2. MMCDXX

3. LXXIX

4. MCMV

5. CCXCIX

6. MMCDXX

7. DCCLXVI

8. MDXXV

9. MMCDLIX

B. Write the Roman numerals for the following.

1. 2010 =

2. 2534 =

3. 3250 =

4. 1971 =

5. 1603 =

6. 2006 =

7. 1954 =

8. 1320 =

9. 2919 =

C. Cross out the wrongly written Roman numerals.

1. VVV =

2. XI =

3. LLIV =

4. XM =

5. CCCL =

6. DDD =

7. XXII =

8. LC =

9. ICC =

10. CCCVI =

11. MCCCIX =

12. XLIX =

D. Fill in the circles with >, < or =

1. CMDVI ⬡ 474

2. MMMDVII ⬡ 2744

3. MMDIX ⬡ 2509

4. 714 ⬡ DCCXIV

5. MDIX ⬡ CMXLII

6. MXIV ⬡ MDXXII

19

WORKSHEET

Match the following Roman numerals with the Indo-Arabic numerals.

1. CMLXXVIII   109

2. MCCL   2322

3. XXXIV   1344

4. CIX   642

5. DCXLII   449

6. MMCCCXXII   768

7. CCCL   34

8. DCCLXVIII   1250

9. MCCCXLIV   350

10. CDXLIX   978

20

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MATHS LAB

Objective : To play with Roman numerals

Materials Required : Roman numeral cards from the Math kit

| I | V | X | L | C | D | M |

Steps :

1. Write your name in capital letters.

    Example : SOURAV

2. Give numeral values to each alphabet like A = 1, B = 2, C = 3 .... Z = 26.

3. Find the numeral value for the name.

    | S | + | O | + | U | + | R | + | A | + | V | |
    | 19 | + | 15 | + | 21 | + | 18 | + | 1 | + | 22 | = | 96 |

4. Use Roman numeral cards from the kit and express the number in Roman numerals in the given box.

    96 = XCVI