

Exercise 1.10

Q.1 Write the Roman numerals for each of the following

(i) 33

(ii) 48

(iii) 76

(iv) 95

Sol: (i) $33 = 30 + 3 = XXX + III = XXXIII$

(ii) $48 = 40 + 8 = XL + VIII = XLVIII$

(iii) $76 = 70 + 6 = LXX + VI = LXXVI$

(iv) $95 = 90 + 5 = (100 - 10) + 5$
 $= XC + V = XCV$

Q.2 Write the following in Roman numerals.

(i) 154

(ii) 173

(iii) 248

(iv) 319

Solution (i) $154 = 100 + 50 + 4 = C + L + IV = CLIV$

(ii) $173 = 100 + 70 + 3$
 $= C + LXX + III = CLXXIII$

(iii) $248 = 200 + 40 + 8$
 $= 200 + (50 - 10) + 8$
 $= CC + XL + VIII = CCXLVIII$

(iv) $319 = 300 + 10 + 9$
 $= CCC + X + IX = CCCXIX$

Q.3 Write the following in Roman numerals:

(i) 1008 (ii) 2718 (iii) 3906 (iv) 3794

Solution: (i) $1008 = 1000 + 8 = M + VIII = MVIII$

$$\begin{aligned} \text{(ii)} \quad 2718 &= 2000 + 700 + 10 + 8 \\ &= MM + DCC + X + VIII = MMDCCXVIII \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad 3906 &= 3000 + 900 + 6 \\ &= MMM + CM + VI = MMMCMVI \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad 3794 &= 3000 + 700 + 90 + 4 \\ &= MMM + DCC + XC + IV = MMMDCCXCIV \end{aligned}$$

Q.4 Write the following numbers in Roman numerals:

(i) 4201 (ii) 10009 (iii) 44000 (iv) 25819

$$\begin{aligned} \text{Sol: (i)} \quad 4201 &= 4000 + 200 + 1 \\ &= \overline{IV} + CC + I = \overline{IV}CC I \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad 10009 &= 10000 + 9 \\ &= \overline{X} + IX = \overline{X}IX \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad 44000 &= (44) \times 1000 \\ &= (40 + 4) \times 1000 = \\ &= (XL + IV) \times 1000 = \overline{XLIV} \end{aligned}$$

$$\begin{aligned}
 \text{(iv)} \quad 25819 &= 25000 + 800 + 10 + 9 \\
 &= \overline{XXV} + DCC + X + IX \\
 &= \overline{XXV} DCC XIX
 \end{aligned}$$

Q-5 Write the following in Hindu Arabic numerals.

$$(i) XXVI \quad (ii) XXIX \quad (iii) LXXVII \quad (iv) XCI$$

Solution (i) $XXVI = XX + VI$
 $= 20 + 6 = 26$

$$(ii) XXIX = XX + IX = 20 + 9 = 29$$

$$(iii) LXXVII = LXX + II = 70 + 2 = 72$$

$$\begin{aligned}
 \text{(iv)} \quad XCI &= XC + I \\
 &= (100 - 10) + 1 = 90 + 1 = 91
 \end{aligned}$$

Q-6 Write the corresponding Hindu Arabic numerals for each of the following.

$$(i) CIX \quad (ii) CLXXII \quad (iii) CCLIV \quad (iv) CCCXXIX$$

Sol: (i) $CIX = C + IX = 100 + 9 = 109$

$$(ii) CLXXII = CL + XX + II = 150 + 20 + 2 = 172$$

$$(iii) CCLIV = CC + L + IV = 200 + 50 + 4 = 254$$

$$\begin{aligned}
 \text{(iv)} \quad CCCXXIX &= CCC + XX + IX \\
 &= 300 + 20 + 9 = 329
 \end{aligned}$$

Q.7 Write the corresponding Hindu Arabic numerals for each of the following.

(i) KXIX (ii) KDLXV (iii) KKCXXIII

(iv) KKKDCXL

Solution: (i) $KXIX = K + X + IX$
 $= 1000 + 10 + 9 = 1019$

(ii) $KDLXV = K + D + L + XV$
 $= 1000 + 500 + 50 + 15 = 1565$

(iii) $KKCXXIII = KK + C + X + III$
 $= 2000 + 100 + 3 = 2103$

(iv) $KKKDCXL = KKK + DC + XL$
 $= 3000 + 600 + 40 = 3640$

Q.8 Write the following in Hindu Arabic numerals

(i) $\overline{IVCDXLIV}$ (ii) $\overline{VICRXLIX}$ (iii) $\overline{IXCCCXCI}$

(iv) $\overline{LX*IX}$

Sol (i) $\overline{IVCDXLIV} = \overline{IV} + \overline{CD} + \overline{XL} + \overline{IV}$
 $= 4000 + 400 + 40 + 4 = 4444$

(ii) $\overline{VICRXLIX} = \overline{VI} + \overline{CR} + \overline{XL} + \overline{IX}$
 $= 6000 + (1000 - 100) + (50 - 10) + 9$
 $= 6000 + 900 + 40 + 9 = 6949$

$$\begin{aligned}
 \text{(iii)} \quad \overline{\text{IX}} \text{ CCC XCI} &= \overline{\text{IX}} + \text{CCC} + \text{XC} + \text{I} \\
 &= 9000 + 3000 + 90 + 1 \\
 &= 9391
 \end{aligned}$$

$$\begin{aligned}
 \text{(iv)} \quad \overline{\text{LX}} \text{ XIX} &= \overline{\text{LX}} + \text{IX} + \text{I} \\
 &= 70,000 + 9 = 70,009
 \end{aligned}$$

Q.9 which of the following is meaningless?

(i) $\overline{\text{III}} \text{ CC}$ (ii) KKKCCXI (iii) XD (iv) VC

Solution: From the above (i) and (iii) are meaningless.