

(iii) 24, 36, 48

Factor of 24 = {1, 2, 3, 4, 6, 8, 12, 24}

Factor of 36 = {1, 2, 3, 4, 6, 9, 12, 18, 36}

Factor of 48 = {1, 2, 3, 4, 6, 8, 12, 16, 24, 48}

$n(A \cap B) = \{1, 2, 3, 4, 6, 12\}$

HCF = 12 Ans.

Q.16. Find L.C.M of the following by method of set:

(i) 12, 18

L.C.M of 12 = {12, 24, 36, 48, 60, 72, 84, ...}

L.C.M of 18 = {18, 36, 54, 72, 90, 108, ...}

$n(A \cap B) = \{24, 48\} \cup \{36, 72\}$

L.C.M = ~~24~~ Ans. 36 Ans.

(ii) 3, 6 and 15

L.C.M of 3 = {3, 6, 9, 12, 15, 18, ...}

L.C.M of 6 = {6, 12, 18, 24, 30, 36, ...}

L.C.M of 15 = {15, 30, 45, 60, 75, ...}

$n(A \cap B) = \{30, 60\}$

L.C.M = 30

(iii) 4, 8, 12

L.C.M of 4 = {4, 8, 12, 16, 20, 24, 28, 32, ...}

L.C.M of 8 = {8, 16, 24, 32, 40, 48, 56, 64, ...}

L.C.M of 12 = {12, 24, 36, 48, 60, 72, 84, 96, ...}

Q-26. $A = \{1, 2, 3, 4, 5\}$, $B = \{4, 5, 6, 7\}$, $C = \{6, 7, 8, 9, 10\}$

Prove that $A \cup (A \cap (B \cup C)) = (A \cap B) \cup (A \cap C)$

L.H.S

$$A \cap (B \cup C)$$

$$B \cup C = \{4, 5, 6, 7, 8, 9, 10\}$$

$$A \cap (B \cup C) = \{4, 5\}$$

R.H.S

$$(A \cap B) \cup (A \cap C)$$

$$A \cap B = \{4, 5\}$$

$$A \cap C = \phi$$

$$(A \cap B) \cup (A \cap C) = \{4, 5\}$$

L.H.S = R.H.S proves

Q-27. let,

$A = \text{Accountancy}$ $\frac{\text{उ.न.व. का विषय}}{\text{Accountancy}}$

$S = \text{Statistics}$ " " "

$$n(A \cup S) = 50$$

$$n(A \cap S) = 12$$

$$n(S) = 18$$

$$n(A) = ?$$

$$n(S) = n(S) - n(S \cap A)$$

$$18 = n(S) - 12$$

$$n(S) = 30$$

$$\begin{aligned}n(A) &= n(A \cup S) + n(A \cap S) - n(S) \\&= 50 + 12 - 30 \\&= 62 - 30 \\&= 32 \text{ Auf.}\end{aligned}$$