

Chap # 1:

Sets

1. Write the following set into descriptive form,

i, $A = \{a, e, i, o, u\}$

A = Set of vowels of the English alphabets

ii, $B = \{3, 6, 9, 12, \dots\}$

B = Set of multiples of 3

iii, $C = \{s, p, r, i, n, g\}$

C = Set of letters of the word spring.

iv, $D = \{a, b, c, d, \dots, z\}$

D = Set of small letters of the English alphabet.

$$\text{v}, E = \{6, 7, 8, 9, 10\}$$

E = Set of natural number from 6 to 10.

$$\text{vi}, F = \{0, \pm 1, \pm 2\}$$

F = Set of integer between -3 and +3.

$$\text{vii}, G = \{x \mid x \in \mathbb{N} \wedge x < 3\}$$

G = set of natural number less than 3.

$$\text{viii}, H = \{x \mid x \in \mathbb{N} \wedge x > 99\}$$

H = Set of natural number greater than 99.

2, Write the following set into tabular form.

(i) A = Letter of the word hockey.

$$A = \{h, o, c, k, e, y\}$$

(ii) B = Two colours in the rainbow.

$$B = \{\text{red, blue}\}$$

(iii) C = Number less than 18 divisible by 3.

$$C = \{3, 6, 9, 12, 15\}$$

(iv) D = Multiples of 5 less than 30

$$D = \{5, 10, 15, 20, 25\}$$

(v) $E = \{x \mid x \in \mathbb{N} \wedge x > 5\}$

$$E = \{6, 7, 8, 9, \dots\}$$

(vi) $F = \{x \mid x \in \mathbb{Z} \wedge -7 < x < -1\}$

$$F = \{-6, -5, -4, -3, -2\}$$

3. Write the following set into Set builder form.

(i) $A = \{1, 2, 3, 4, 5\}$
 $A = \{x | x \in \mathbb{N} \wedge x < 6\}$

(ii) $B = \{2, 3, 5, 7\}$

$B = \{x | x \in \mathbb{P} \wedge x < 11\}$
(iii) $N =$ Set of natural number.
 $N = \{x | x \in \mathbb{N}\}$

(iv) $W =$ Set of whole number.
 $W = \{x | x \in \mathbb{W}\}$

(v) $Z =$ Set of all integer.
 $Z = \{x | x \in \mathbb{Z}\}$

(vi) $L = \{5, 10, 15, 20, \dots\}$

$L = \{x | x \text{ is a multiple of } 5\}$

(vii) E : Set of even number b/w 1 and 10.

$$E = \{x \mid x \in E \wedge 1 < x < 10\}$$

(viii) O : Set of odd number greater than 15.

$O = \{x \mid x \text{ is a planet in the solar system}\}$

(ix) C : Set of planets in the solar system.

$C = \{x \mid x \text{ is a planet in the solar system}\}$

(x) S : Set of colour in the rainbow.

~~$S = \{x \mid x \text{ is a colour in the rainbow}\}$~~

Ex # 1.2

Find the union set.

$$A = \{1, 3, 5\}, B = \{1, 2, 3, 4, 5\}$$

$$\begin{aligned} A \cup B &= \{1, 3, 5\} \cup \{1, 2, 3, 4, 5\} \\ &= \{1, 2, 3, 4, 5\} \end{aligned}$$

$$S = \{a, b, c\}, T = \{c, d, e\}$$

$$\begin{aligned} S \cup T &= \{a, b, c\} \cup \{c, d, e\} \\ &= \{a, b, c, d, e\} \end{aligned}$$

$$X = \{2, 4, 6, 8, 10\}, Y = \{1, 5, 10\}$$

$$X \cup Y = \{1, 2, 4, 5, 6, 8, 10\}$$

$$C = \{i, o, u\}, D = \{a, e, o\}, E = \{i, e, u\}$$

$$\begin{aligned} C \cup D &= \{i, o, u\} \cup \{a, e, o\} \\ &= \{i, o, a, e, u\} \end{aligned}$$

$$\begin{aligned} \text{CUE} &= \{i, o, u\} \cup \{i, e, u\} \\ &= \{i, e, o, u\} \end{aligned}$$

$$L = \{3, 6, 9, 12\}, M = \{6, 12, 18, 24\}$$

$$N = \{4, 8, 12, 16\}$$

$$\begin{aligned} \text{LUM} &= \{3, 6, 9, 12\} \cup \{6, 12, 18, 24\} \\ &= \{3, 6, 9, 12, 18, 24\} \end{aligned}$$

$$\begin{aligned} \text{LUN} &= \{3, 6, 9, 12\} \cup \{4, 8, 12, 16\} \\ &= \{3, 4, 6, 9, 8, 12, 16\} \end{aligned}$$

Find the interseusion set.

$$P = \{0, 1, 2, 3\}, Q = \{-3, -2, -1, 0\}$$

$$P \cap Q = \{0\}$$

$$M = \{1, 2, 3, \dots, 10\}, N = \{1, 3, 5, 7, 9\}$$

$$M \cap N = \{1, 3, 5, 7, 9\}$$

$$A = \{3, 6, 9, 12, 15\}, B = \{5, 10, 15, 20\}$$

$$\begin{aligned} A \cap B &= \{3, 6, 9, 12, 15\} \cap \{5, 10, 15, 20\} \\ &= \{15\} \end{aligned}$$

$$U = \{-1, -2, -3\}, V = \{1, 2, 3\}, W = \{0, \pm 1, \pm 2\}$$

$$U \cap V = \{\}$$

$$X = \{a, l, m\}, Y = \{i, s, l, a, m\}$$
$$Z = \{l, i, o, n\}$$

$$X \cap Y = \{a, l, m\} \cap \{i, s, l, a, m\}$$
$$= \{a, l, m\}$$

$$(X \cap Y) \cap Z = \{a, l, m\} \cap \{l, i, o, n\}$$
$$= \{l\}$$

If N : set of natural number
and W : set of whole number
then find $N \cup W$ and $N \cap W$

$$N \cup W = \{1, 2, 3, \dots\} \cup \{0, 1, 2, 3, \dots\}$$
$$= \{0, 1, 2, 3, \dots\}$$

$$N \cap W = \{1, 2, 3, \dots\} \cap \{0, 1, 2, 3, \dots\}$$

$$= \{1, 2, 3, 4, 5, \dots\}$$

If $P =$ set of prime number
and $C =$ set of composite
number then find $P \cup C$ and
 $P \cap C$.

$$P \cup C = \{2, 3, 5, 7, \dots\} \cup \{4, 6, 8, 9, \dots\}$$

$$= \{2, 3, 4, 5, 6, 7, 8, 9, \dots\}$$

$$P \cap C = \{2, 3, 5, 7, 11, \dots\} \cap \{4, 6, 8, 9, 10, \dots\}$$

$$= \{ \}$$

If $A = \{a, c, d, f\}$, $B = \{b, c, f, g\}$
and $C = \{c, f, g, h\}$ then find:

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

~~$$= A \cup (b, c, f, g) \cup (c, f, g, h)$$~~

~~$$= A \cup (b, c, f, g, h)$$~~

~~$$= (a, c, d, f) \cup (b, c, f, g, h)$$~~

~~$$= (a, b, c, d, g, f, h)$$~~

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

$$= A \cap (b, c, f, g) \cap (c, f, g, h)$$

$$= A \cap (c, f, g)$$

$$= (a, c, d, f) \cap (c, f, g)$$

$$= (c, f)$$

If $X = \{1, 2, 3, \dots, 10\}$, $Y = \{2, 4, 6, 8, 12\}$
 $Z = \{2, 3, 5, 7, 11\}$ Then find:

$$X \cup (Y \cup Z)$$

$$= X \cup \{2, 4, 6, 8, 12\} \cup \{2, 3, 5, 7, 11\}$$

$$= X \cup \{2, 3, 4, 5, 6, 7, 8, 11, 12\}$$

$$= \{1, 2, 3, 4, 5, \dots, 10\} \cup \{2, 3, 4, 5, 6, 7, 8, 11, 12\}$$

$$= \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$$

$$X \cap (Y \cap Z)$$

$$= X \cap \{2, 4, 6, 8, 12\} \cap \{2, 3, 5, 7, 11\}$$

$$= X \cap \{2\}$$

$$= \{1, 2, 3, \dots, 10\} \cap \{2\}$$

$$= \{2\}$$

If $R = \{0, 1, 2, 3\}$, $S = \{0, 2, 4\}$, $T = \{1, 2, 3, 4\}$ then find

R/S

$$\begin{aligned} R-S &= \{0, 1, 2, 3\} - \{0, 2, 4\} \\ &= \{1, 3\} \end{aligned}$$

T/S

$$\begin{aligned} T-S &= \{1, 2, 3, 4\} - \{0, 2, 4\} \\ &= \{1, 3\} \end{aligned}$$

R/T

$$\begin{aligned} R-T &= \{0, 1, 2, 3\} - \{1, 2, 3, 4\} \\ &= \{0\} \end{aligned}$$

S/R

$$\begin{aligned} S-R &= \{0, 2, 4\} - \{0, 1, 2, 3\} \\ &= \{4\} \end{aligned}$$

Exercise # 1.3

1) Find and separate disjoint and overlapping sets.

$A = \{a, b, c, d, e\}$, $B = \{d, e, f, g, h\}$
overlapping set.

$L = \{2, 4, 6, 8, 10\}$, $M = \{3, 6, 9, 12\}$
overlapping set

$P = \{ \text{set of prime number} \}$

$C = \{ \text{set of composite number} \}$
disjoint set.

$E = \text{set of even number}$

$O = \text{set of odd number}$

disjoint set

2. If $U = \{1, 2, 3, 4, \dots, 10\}$, $A = \{1, 2, 3, 4, 5\}$
 $B = \{1, 3, 5, 7, 9\}$, $C = \{2, 4, 6, 8, 10\}$, $D = \{3, 4, 5, 6, 7\}$ then find:

A'

$$\begin{aligned} U - A &= \{1, 2, 3, \dots, 10\} - \{1, 2, 3, 4, 5\} \\ &= \{6, 7, 8, 9, 10\} \end{aligned}$$

B'

$$B' = U - B = \{1, 2, 3, \dots, 10\} - \{1, 3, 5, 7, 9\} \\ = \{2, 4, 6, 8, 10\}$$

C'

$$U - C = \{1, 2, 3, \dots, 10\} - \{2, 4, 6, 8, 10\} \\ = \{1, 3, 5, 7, 9\}$$

D'

$$U - D = \{1, 2, 3, 4, \dots, 10\} - \{3, 4, 5, 6, 7\} \\ = \{1, 2, 8, 9, 10\}$$

If $U = \{a, b, c, \dots, i\}$ $X = \{a, c, e, g, i\}$
 $Y = \{a, e, i\}$ $Z = \{a, g, h\}$ find:

$$U - X = \{a, b, c, \dots, i\} - \{a, c, e, g, i\} \\ = \{b, d, f\}$$

Y'

$$U - Y = \{a, b, c, \dots, i\} - \{a, e, i\} \\ = \{b, c, d, f, g, h\}$$

Z'

$$U - Z = \{a, b, c, \dots, i\} - \{a, g, h\} \\ = \{b, c, d, e, f\}$$

U'

$$U - U = \{a, b, c, \dots, i\} - \{a, b, c, \dots, i\} \\ = \{ \}$$

If $U = \{1, 2, 3, \dots, 20\}$ $A = \{1, 3, 5, 7, \dots, 19\}$
and $B = \{2, 4, 6, 8, \dots, 20\}$ prove

$B' = A$

$$U - B = A \quad \{1, 2, 3, \dots, 20\} - \{2, 4, 6, 8, \dots, 20\} \\ = \{1, 3, 5, 7, \dots, 19\} \\ A = A$$

~~$A' = B$~~

~~$$U - A = B \quad \{1, 2, 3, \dots, 20\} - \{1, 3, 5, 7, \dots, 19\} \\ = \{2, 4, 6, 8, \dots, 20\} \\ \text{L.H.S} = \text{R.H.S}$$~~

$$A/B = A$$

$$\begin{aligned} &= \{1, 3, 5, 7 \dots 19\} - \{2, 4, 6, 8 \dots 20\} \\ &= \{1, 3, 5, 7 \dots 19\} \\ &\text{L.H.S} = \text{R.H.S} \end{aligned}$$

$$B/A = B$$

$$\begin{aligned} &= \{2, 4, 6, 8 \dots 20\} - \{1, 3, 5, 7 \dots 19\} \\ &= \{2, 4, 6 \dots 20\} \\ &\text{L.H.S} = \text{R.H.S} \end{aligned}$$

If U : set of integer and
 W : set of whole number
The find the compliment
of set W .

$$U - W =$$

$$\begin{aligned} &= \{0, \pm 1, \pm 2 \dots\} - \{0, 1, 2 \dots\} \\ &= \{-1, -2 \dots\} \end{aligned}$$

If U : set of natural number and P : set of prime number then find the complement of P .

$$U - P$$

$$= \{1, 2, 3, \dots\} - \{2, 3, 5, 7, 11, \dots\}$$
$$= \{1, 4, 6, 8, \dots\}$$

Exercise # 1.4

If $A = \{a, e, i, o, u\}$ and $C = \{a, c, e, g\}$
 $B = \{a, b, c\}$ then verify:

$$A \cap B, B \cap A$$

$$= \{a, e, i, o, u\} \cap \{a, b, c\}$$
$$= \{a\}$$

$$\text{R.H.S}$$

$$= \{a, b, c\} \cap \{a, e, i, o, u\}$$
$$= \{a\}$$

$$\text{L.H.S} = \text{R.H.S}$$

$$A \cup B = B \cup A$$

L.H.S

$$= \{a, e, i, o, u\} \cup \{a, b, c\}$$
$$= \{a, b, c, e, i, o, u\}$$

R.H.S

$$= \{a, b, c\} \cup \{a, e, i, o, u\}$$
$$= \{a, b, c, e, i, o, u\}$$

L.H.S = R.H.S

$$B \cup C = C \cup B$$

L.H.S

$$= \{a, b, c\} \cup \{a, e, c, g\}$$
$$= \{a, b, c, e, g\}$$

R.H.S

$$= \{a, c, e, g\} \cup \{a, b, c\}$$
$$= \{a, c, e, g, b\}$$

L.H.S = R.H.S

$$B \cap C = C \cap B$$

L.H.S = R

$$= \{a, b, c\} \cap \{a, c, e, g\}$$
$$= \{a, c\}$$

$$\begin{aligned}
 & \text{R.H.S} \\
 & = \{a, c, e, g\} \cap \{a, b, c\} \\
 & = \{a, c\} \\
 & \text{L.H.S} = \text{R.H.S}
 \end{aligned}$$

$$A \cap C = C \cap A$$

$$\begin{aligned}
 & \text{L.H.S} \\
 & = \{a, e, i, o, u\} \cap \{a, c, e, g\} \\
 & = \{a, e\}
 \end{aligned}$$

$$\begin{aligned}
 & \text{R.H.S} \\
 & = \{a, c, e, g\} \cap \{a, e, i, o, u\} \\
 & = \{a, e\} \\
 & \text{L.H.S} = \text{R.H.S}
 \end{aligned}$$

$$A \cup C = C \cup A$$

$$\begin{aligned}
 & \text{L.H.S} \\
 & = \{a, e, i, o, u\} \cup \{a, c, e, g\} \\
 & = \{a, e, i, o, u, c, g\}
 \end{aligned}$$

$$\begin{aligned}
 & \text{R.H.S} \\
 & = \{a, c, e, g\} \cup \{a, e, i, o, u\} \\
 & = \{a, e, c, g, i, o, u\} \\
 & \text{L.H.S} = \text{R.H.S}
 \end{aligned}$$

If $X = \{1, 3, 7\}$, $Y = \{2, 3, 5\}$
and $Z = \{1, 4, 8\}$ Then verify

$$X \cap (Y \cap Z) = (X \cap Y) \cap Z$$

L.H.S

$$\begin{aligned} X \cap (Y \cap Z) &= \{2, 3, 5\} \cap \{1, 4, 8\} \\ &= \{ \} \\ &= \{1, 3, 7\} \cap \{ \} \\ &= \{ \} \end{aligned}$$

R.H.S

$$\begin{aligned} (X \cap Y) \cap Z &= \{1, 3, 7\} \cap \{2, 3, 5\} \\ &= \{3\} \\ &= \{3\} \cap \{1, 4, 8\} \\ &= \{ \} \end{aligned}$$

$$X \cup (Y \cup Z) = (X \cup Y) \cup Z$$

L.H.S

$$\begin{aligned} X \cup (Y \cup Z) &= \{2, 3, 5\} \cup \{1, 4, 8\} \\ &= \{2, 3, 5, 1, 4, 8\} \\ &= \{1, 3, 7\} \cup \{1, 2, 3, 4, 5, 8\} \\ &= \{1, 2, 3, 4, 5, 7, 8\} \end{aligned}$$

R.H.S

$$= \{1, 3, 7\} \cup \{2, 3, 5\}$$

$$= \{1, 2, 3, 5, 7\}$$

$$= \{1, 2, 3, 5, 7\} \cup \{1, 4, 8\}$$

$$= \{1, 2, 3, 4, 5, 7, 8\}$$

If $S = \{-2, -1, 0, 1\}$, $T = \{-4, -1, 1, 3\}$
and $U = \{0, \pm 1, \pm 2\}$ then verify

$$S \cap (T \cap U) = (S \cap T) \cap U$$

L.H.S

$$\{0, +1, -1, +2, -2\}$$

$S \cap T$

$$= \{-4, -1, 1, 3\} \cap \{0, \pm 1, \pm 2\}$$

$=$

$$= \{-1, +1\}$$

$$= \{-1, +1\} \cap \{-2, -1, 0, 1\}$$

$$= \{-1, +1\}$$

R.H.S

$$= \{-2, -1, 0, 1\} \cap \{-4, -1, 1, 3\}$$

$$= \{-1, 1\}$$

$$\{-1, 1\} \cap \{0, \pm 1, \pm 2\}$$

$$= \{-1, 1\}$$

$$\text{L.H.S} = \text{R.H.S}$$

$$SU(TUU) = (SUT)UU$$

L.H.S

$$SU(TUU)$$

$$= \{-4, -1, 1, 3\} \cup \{0, \pm 1, \pm 2\}$$

$$= \{-4, -1, 1, 3, 0, \pm 1, \pm 2\}$$

$$= \{-2, -1, 0, 1\} \cup \{-4, -1, 1, 3, 0, \pm 1, \pm 2\}$$

$$= \{-2, -1, 0, 1, -4, 3, 0, \pm 1, \pm 2\}$$

R.H.S

$$= \{-2, -1, 0, 1\} \cup \{-4, -1, 1, 3\}$$

$$= \{-2, -1, 0, 1, 3\}$$

$$= \{-2, -1, 0, 1, 3\} \cup \{0, \pm 1, \pm 2\}$$

$$= \{-2, -1, 0, 1, 3, \pm 1, \pm 2\}$$

$$\text{L.H.S} = \text{R.H.S}$$

If $O = \{1, 3, 5, 7, \dots\}$ $E = \{2, 4, 6, 8, \dots\}$
 and $N = \{1, 2, 3, 4, \dots\}$ then verify
 $O \cap (E \cap N) = (O \cap E) \cap N$

L.H.S

$O \cap (E \cap N)$

$$= \{2, 4, 6, 8, \dots\} \cap \{1, 2, 3, 4, \dots\}$$

$$= \{2, 4, 6, \dots\}$$

$$= \{2, 4, 6, \dots\} \cap \{1, 3, 5, 7, \dots\}$$

$$= \{ \}$$

R.H.S

$$= \{1, 3, 5, 7, \dots\} \cap \{2, 4, 6, 8, \dots\}$$

$$= \{ \}$$

$$= \{ \} \cap \{1, 2, 3, 4, \dots\}$$

L.H.S = R.H.S

$O \cup (E \cap N) = (O \cup E) \cap N$

L.H.S

$$= \{2, 4, 6, 8, \dots\} \cup \{1, 2, 3, 4, \dots\}$$

$$= \{2, 4, 6, 8, 10, 3, \dots\}$$

$$= \{2, 4, 6, 8, 10, \dots\} \cup \{1, 3, 5, 7, \dots\}$$

R.H.S

$$= \{1, 3, 5, 7, \dots\} \cup \{2, 4, 6, 8, \dots\}$$

$$= \{1, 2, 3, 4, 5, 6, 7, 8, \dots\}$$

$$= \{1, 2, 3, 4, 5, 6, 7, 8, \dots\} \cup \{1, 2, 3, 4, 5, \dots\}$$

$$= \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, \dots\}$$

$$L.H.S = R.H.S$$

If $U = \{a, b, c, \dots, z\}$ $S = \{a, e, i, o, u\}$
 and $T = \{x, y, z\}$ Then verify

$$S \cup \emptyset = S$$

$$= \{a, e, i, o, u\} \cup \{\}$$

$$= \{a, e, i, o, u\}$$

$$L.H.S = R.H.S$$

$$T \cap U = T$$

$$= \{x, y, z\} \cap \{a, b, c, \dots, z\}$$

$$= \{x, y, z\}$$

$$L.H.S = R.H.S$$

$$S \cap S' = \emptyset$$

~~$$S \cap S' = \emptyset$$~~

$$= \{a, e, i, o, u\} \cap \{a, b, c, \dots, z\} = \{a, e, i, o, u\}$$

$$= \{a, e, i, o, u\} \cap \{b, c, d, f, \dots\} = \emptyset$$

$$TUT' = U$$

$$\begin{aligned} &= \{x, y, z\} \cup \{a, b, c, \dots, z\} \cup \{xy, z\} \\ &= \{x, y, z\} \cup \{a, b, c, \dots, w\} \\ &= \{a, b, c, x, y, z, w\} \end{aligned}$$

If $A = \{1, 7, 9, 11\}$, $B = \{1, 5, 9, 13\}$ and $C = \{2, 6, 9, 11\}$ verify that

$$A - B \neq B - A$$

$$\begin{aligned} &= \{1, 7, 9, 11\} - \{1, 5, 9, 13\} \\ &= \{7, 11\} \\ &\text{R.H.S} \end{aligned}$$

$$\begin{aligned} &= \{1, 5, 9, 13\} - \{1, 7, 9, 11\} \\ &= \{5, 13\} \\ &A - B \neq B - A \end{aligned}$$

$$A - C \neq C - A$$

$$\begin{aligned} &= \{1, 7, 9, 11\} - \{2, 6, 9, 11\} \\ &= \{1, 7\} \\ &\text{R.H.S} \end{aligned}$$

$$\begin{aligned} &= \{2, 6, 9, 11\} - \{1, 7, 9, 11\} \\ &= \{2, 6\} \\ &A - C \neq C - A \end{aligned}$$

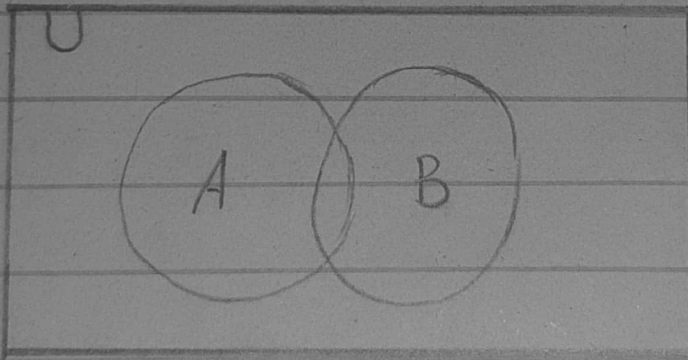
Sets

If $U = \{1, 2, 3, \dots, 10\}$ $A = \{1, 4, 8, 9, 10\}$
and $B = \{2, 3, 4, 7, 10\}$ show that

$$A \cup B = B \cup A$$

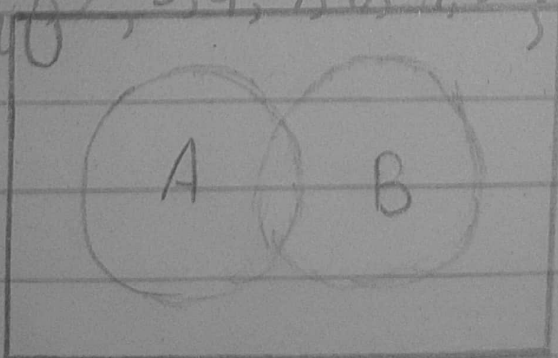
L.H.S

$$= \{1, 4, 8, 9, 10\} \cup \{2, 3, 4, 7, 10\}$$
$$= \{1, 2, 3, 4, 7, 8, 9, 10\}$$



R.H.S

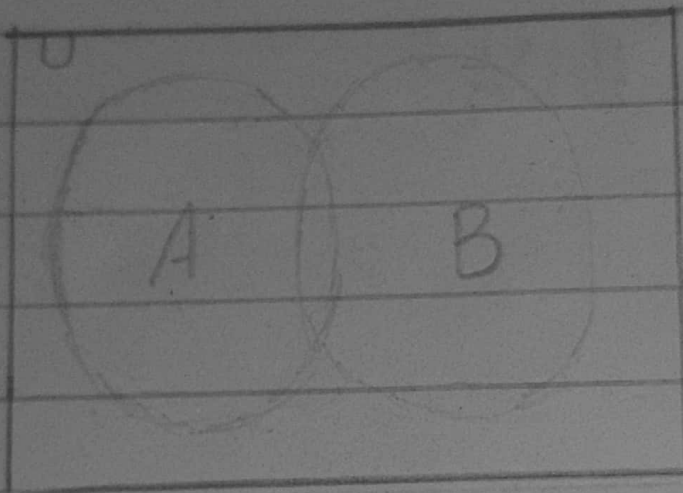
$$= \{2, 3, 4, 7, 10\} \cup \{1, 4, 8, 9, 10\}$$
$$= \{1, 2, 3, 4, 7, 8, 9, 10\}$$



$$A - B \neq B - A$$

L.H.S

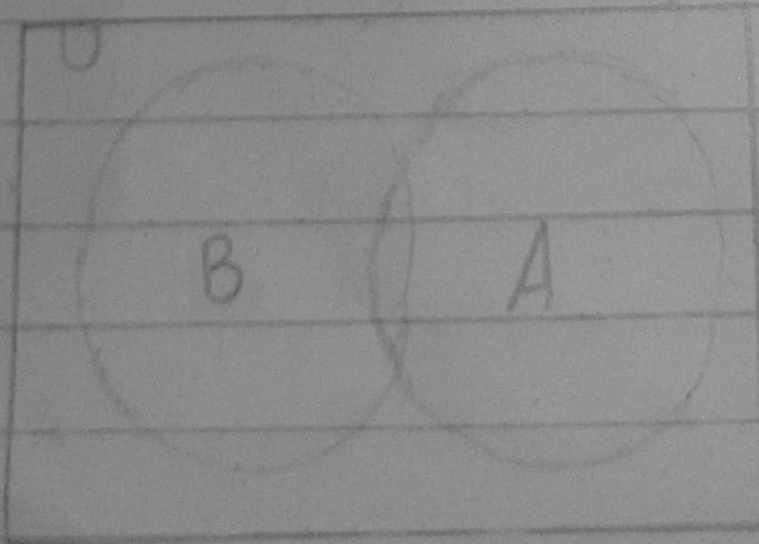
$$= \{1, 4, 8, 9, 10\} - \{2, 3, 4, 7, 10\}$$
$$= \{1, 8, 9\}$$



R.H.S

$$= \{2, 3, 4, 7, 10\} - \{1, 4, 8, 9, 10\}$$
$$= \{2, 3, 7\}$$

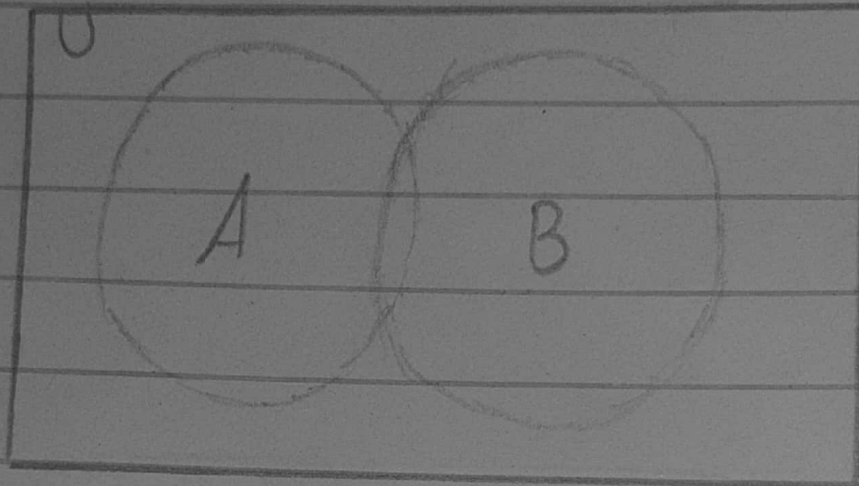
$A - B \neq B - A$



$$A \cap B = B \cap A$$

L.H.S

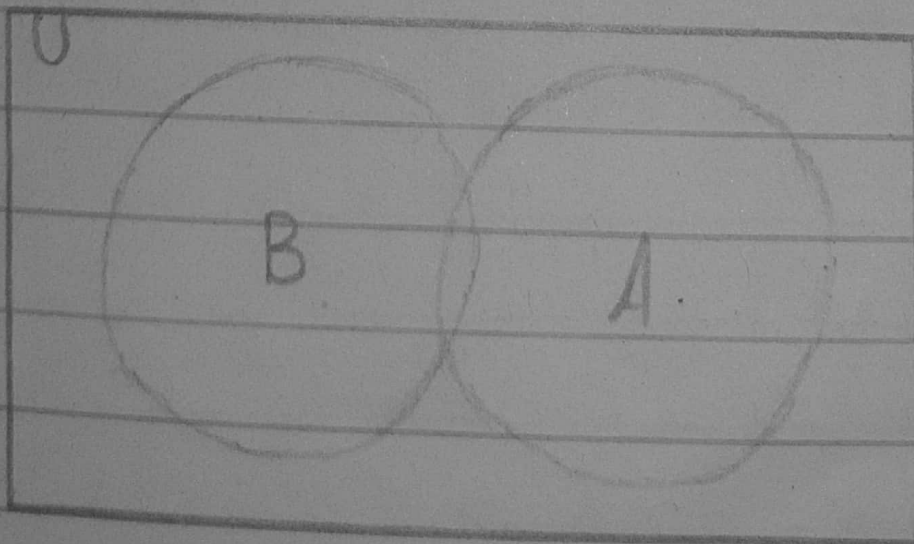
$$= \{1, 4, 8, 9, 10\} \cap \{2, 3, 4, 7, 10\}$$
$$= \{4, 10\}$$



R.H.S

$$= \{2, 3, 4, 7, 10\} \cap \{1, 4, 8, 9, 10\}$$
$$= \{4, 10\}$$

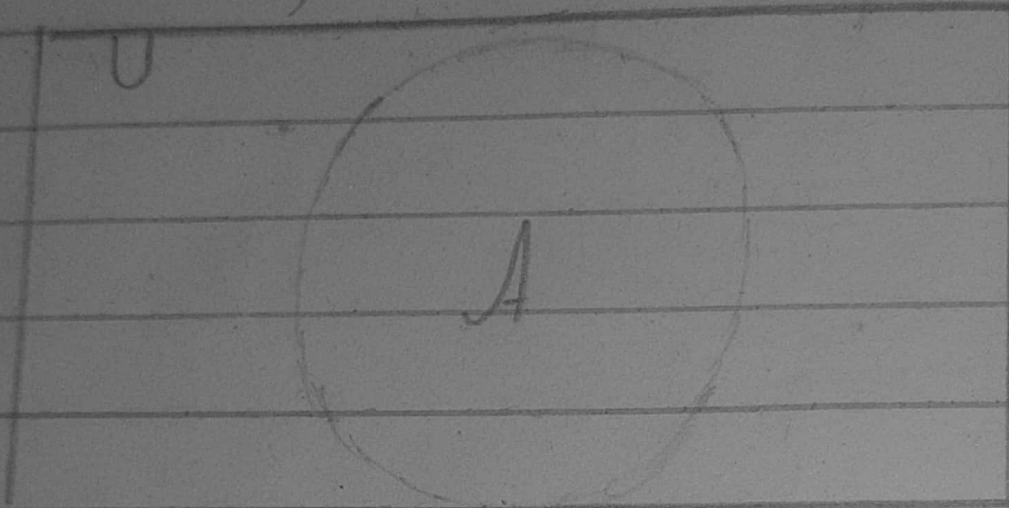
$$\text{L.H.S} = \text{R.H.S}$$



$$A' \neq B'$$

L.H.S

$$= \{1, 2, 3, \dots, 10\} - \{1, 4, 8, 9, 10\}$$
$$= \{2, 3, 5, 6, 7\}$$



R.H.S

$$= \{1, 2, 3, \dots, 10\} - \{2, 3, 4, 7, 10\}$$
$$= \{1, 5, 6, 8, 9\}$$

