



Sets Ex 1.5 Q3(iii)

We have,

$$\begin{aligned} A &= \{x : x \in N\} \\ &= \{1, 2, 3, \dots\}, \text{ the set of natural numbers} \end{aligned}$$

$$\begin{aligned} \text{and } D &= \{x : x \text{ is a prime natural number}\} \\ &= \{2, 3, 5, 7, \dots\} \end{aligned}$$

$$\begin{aligned} A \cap D &= \{x : x \in A \text{ and } x \in D\} \\ &= D \end{aligned} \quad [\because D \subset A]$$

Sets Ex 1.5 Q3(iv)

We have,

$$\begin{aligned} B &= \{x : x = 2n, x \in N\} \\ &= \{2, 4, 6, 8, \dots\}, \text{ the set of even natural numbers} \end{aligned}$$

and

$$\begin{aligned} C &= \{x : x = 2n - 1, x \in N\} \\ &= \{1, 3, 5, \dots\}, \text{ the set of odd natural numbers} \end{aligned}$$

$$\begin{aligned} B \cap C &= \{x : x \in B \text{ and } x \in C\} \\ &= \emptyset \end{aligned} \quad [\because B \text{ and } C \text{ are disjoint sets, i.e.,} \\ \text{have no elements in common}]$$

Sets Ex 1.5 Q3(v)

Here,

$$\begin{aligned} B &= \{x : x = 2n, x \in N\} \\ &= \{2, 4, 6, 8, \dots\}, \text{ the set of even natural numbers} \end{aligned}$$

$$\begin{aligned} \text{and } D &= \{x : x \text{ is a prime natural number}\} \\ &= \{2, 3, 5, 7, \dots\} \end{aligned}$$

$$\begin{aligned} B \cap D &= \{x : x \in B \text{ and } x \in D\} \\ &= \{2\} \end{aligned}$$

Sets Ex 1.5 Q3(vi)

Here,

$$\begin{aligned} C &= \{x : x = 2n - 1, x \in \mathbb{N}\} \\ &= \{1, 3, 5, \dots\}, \text{ the set of odd natural numbers} \end{aligned}$$

$$\begin{aligned} \text{and } D &= \{x : x \text{ is a prime natural number}\} \\ &= \{2, 3, 5, 7, \dots\} \end{aligned}$$

$$C \cap D = \{x : x \in C \text{ and } x \in D\}$$

We observe that except, the element 2, every other element in  $D$  is an odd natural number.

$$\begin{aligned} \text{Hence, } C \cap D &= D - \{2\} \\ &= \{x \in D : x \neq 2\} \end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*