

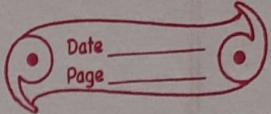
class - VI

Pournya

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see - B

Exercise 13(c)



1. Fill in the blanks:

i) If each element of set P is also an element of set Q, then P is said to be subset of Q and Q is said to be super-set of P.

ii) Every set is a subset of itself

iii) The empty set is a subset of every set.

iv) If A is proper subset of B then $n(A) < n(B)$

2. If $A = \{5, 7, 8, 9\}$ then which of the following are subset of A

i) $B = \{5, 8\} = B \subset A$ ii) $D = \{7, 9, 10\} = D \not\subset A$ iii) $F = \{8, 7, 9, 5\} = F \subset A$

ii) $C = \{0\} = C \subset A$ iv) $E = \{\emptyset\} = E \subset A$

3. If $P = \{2, 3, 4, 5\}$ then which of the following are proper subset of P?

i) $A = \{3, 4\}$ ii) $C = \{2, 3, 4, 5\}$ iii) $E = \{0\}$

iv) $B = \{\emptyset\}$ v) $D = \{6, 5, 4\}$

A and B are proper subset of P

4) If $A = \{\text{even number less than } 12\}$

$$B = \{2, 4\}$$

$$C = \{1, 2, 3\}$$

$$D = \{2, 6\}$$

$$E = \{\emptyset\}$$

State which of the following statements are true.

i) $B \subset A$ True ii) $C \subseteq A$ False iii) $D \subset C$ False

iv) $D \not\subset A$ False v) $E \supseteq B$ False vi) $A \supseteq B \supseteq E$ True

5. Given $A = \{a, c\}$, $B = \{b, q, n\}$ and $C = \text{Set of digits used to form the number } 1351$. Write all the subsets of sets A, B and C.

$$A = \{\}, \{a\}, \{c\} \text{ and } \{a, c\}$$

$$B = \{\}, \{b\}, \{q\}, \{n\}, \{b, q\}, \{b, n\}, \{q, n\} \text{ and } \{b, q, n\}$$

$$C = \{\}, \{1\}, \{3\}, \{5\}, \{1, 3\}, \{1, 5\}, \{3, 5\} \text{ and } \{1, 3, 5\}$$

6. i) If $A = \{b, q, n\}$ then number of subsets of A = $2^3 = 8$

ii) If $B = \{5, 4, 6, 8\}$ then the number of proper set of B = $2^n - 1 = 2^4 - 1 = 15$

iii) If $C = \{0\}$ then number of subset of C = $2^1 = 2$

iv) If $N = \{x : x \in N \text{ and } x \leq 3\}$ then N has _____ proper set.

$$2^n - 1 = 2^2 - 1 = 3$$

7. For the universal set $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$ find its subsets A, B, C, D such that:

i) $A = \{\text{even numbers}\} = \{4, 6, 8, 10, 12\}$

ii) $B = \{\text{odd numbers greater than 8}\} = \{9, 11, 13\}$

iii) $C = \{\text{prime numbers}\} = \{5, 7, 11, 13\}$

iv) $D = \{\text{even numbers less than 10}\} = \{4, 6, 8\}$