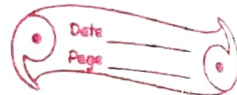


19.7.21

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## EX-10(D)

1. state whether the given set is infinite or finite:

- (i)  $\{3, 5, 7, \dots\}$  — Infinite
- (ii)  $\{1, 2, 3, 4\}$  — finite
- (iii)  $\{\dots, -3, -2, -1, 0, 1, 2\}$  — Infinite
- (iv)  $\{20, 30, 40, 50, \dots, 200\}$  — finite

2. Which of the following sets is empty?

- i) Set of Counting numbers between 5 and 6. empty
- ii) Set of odd numbers between 7 and 19. Not empty.
- iii) Set of odd numbers between 7 and 9. Empty
- iv) Set of even numbers that are not divisible by 2. empty
- v)  $\{0\}$  not empty

3. state which pair of sets given below are equal sets and which are equivalent :

- i)  $\{3, 5, 7\}$  and  $\{5, 3, 7\}$  — Equal
- ii)  $\{8, 6, 10, 12\}$  and  $\{3, 2, 4, 6\}$  — Equivalent
- iii)  $\{7, 7, 2, 1, 2\}$  and  $\{1, 2, 7\}$  — Equal
- iv)  $\{2, 4, 6, 8, 10\}$  and  $\{a, b, d, e, m\}$  — Equivalent.

4. State which of the following are finite sets and which are infinite :-

- (i) Sets of integers — Infinite
- ii)  $\{\text{Multiples of } 5\}$  — Infinite
- iii)  $\{\text{Fractions between } 1 \text{ and } 2\}$  — Infinite

- iv) {Number of people in India} - Finite.
- v) Set of trees in the world - Infinite.
- vi) Set of leaves on a tree - finite.
- vii) Set of children in all the schools of Delhi - finite.
- viii)  $\{\dots, -4, -2, 0, 2, 4, 6, 8\}$  - Infinite.
- ix)  $\{-12, -9, -6, -3, 0, 3, 6, \dots\}$  - Infinite.
- x) {Number of points in a line segment 4 cm long} - Infinite.

5. State whether or not the following sets are empty

- i) {Prime numbers divisible by 2} - Not empty.
- ii) {Negative natural numbers} - Empty.
- iii) {Women with height 5 metre} - Empty.
- iv) {Integers less than 5} - Not Empty.
- v) {Prime numbers between 17 and 23} - Not empty.
- vi) Set of even numbers not divisible by 2 - Empty.
- vii) Set of multiples of 3 that are more than 9 and less than 15. - Not empty.

## Exercise - 10 (E)

1. Write the Cardinal number of each of the following sets :-

i)  $A = \{0, 1, 2, 4\} - 4$

ii)  $B = \{-3, -1, 1, 3, 5, 7\} - 6$

iii)  $C = \{\} - 0$

iv)  $D = \{3, 2, 2, 1, 3, 1, 2\} - 3$

v)  $E = \{\text{Natural numbers between 15 and 20}\} - 4$

vi)  $F = \{\text{whole numbers from 8 to 14}\} - 7$

2. Given :-  $A = \{\text{Natural numbers less than 10}\}$

$B = \{\text{Letters of the word 'PUPPET'}\}$

$C = \{\text{Squares of the first four whole numbers}\}$

$D = \{\text{Odd numbers divisible by 2}\}$

Find :-

i)  $n(A)$  .  $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$$i) n(B) \cdot B = \{P, U, E, T\}$$

$$ii) n(C) \cdot C = \{0, 1, 4, 9\}$$

$$iv) n(D) \cdot D = \{ \} \text{ or } \emptyset$$

3. state True / False for each of the following.  
Correct the wrong statement: -

$$i) \text{ If } A = \{0\}, \text{ then } n(A) = 0 \quad \text{False}$$

Correct statement -  $n(A) = 1$

$$ii) n(\emptyset) = 1 \quad \text{False}$$

Correct statement -  $n(\emptyset) = 0$

$$iii) \text{ If } T = \{a, l, a, h, b, d, h\}; \text{ then } n(T) = 5$$

True

$$iv) \text{ If } B = \{1, 5, 51, 15, 5, 1\}; \text{ then } n(B) = 6$$

False

Correct statement -  $n(B) = 4$