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Exercise 10(2)

1) State whether the given sets is infinite or finite:

i) {3, 5, 7, ...}

Ans- The given set is Infinite.

ii) {1, 2, 3, 4}

Ans- The given set is finite.

iii) {....., -3, -2, -1, 0, 1, 2}

Ans- The given set is infinite.

iv) {20, 30, 40, 50 ..... 200}

Ans- The given set is finite.

2) Which of the following sets is empty?

i) Set of counting numbers between 5 and 6.

Ans- The given set is empty.

ii) Set of odd numbers between 7 and 19.

Ans- The given set is not empty.

iii) Set of odd numbers between 7 and 9.

Ans- The given set is empty.

iv) Set of even numbers that are not divisible by 2.

Ans- The given set is empty.

v) {0}

Ans- The given set is 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}

Ans- The given set is Equal Set.

ii) {8, 6, 10, 12} and {3, 2, 4, 6}

Ans- The given set is Equivalent Set.

iii) {7, 7, 2, 1, 2} and {1, 2, 7}

Ans- The given set is a Equal Set.

iv) {2, 4, 6, 8, 10} and {a, b, d, e, m}
Ans- The given set is equivalent set.
v) {5, 5, 2, 4} and {5, 4, 2, 2}
Ans- The given set is Equal set.

4. State which of the following are finite sets and which are infinite.
i) Set of Integers
Ans- The given set is Infinite.
ii) {Multiples of 5}
Ans- The given set is infinite.
iii) {Fractions between 1 and 2}
Ans- The given set is Infinite.
iv) {Number of People in India}
Ans- The given set is Finite.
v) Set of leaves in the world.
Ans- The given set is Infinite.
vi) Set of leaves on a tree.
Ans- The given set is finite.
vii) Set of children in all schools of Delhi.
Ans- The given set is finite.
viii) {....., -4, -2, 0, 2, 4, 6, 8}
Ans- The given set is Infinite.
ix) {-12, -9, -6, -3, 0, 3, 6, ...}
Ans- The given set is Infinite.
x) {Number of points in a line segment 4cm long.}
Ans- The given set is infinite.

Exercise 10 (c)

2. Given :

A = {Natural numbers less that 10}

B = {letters of the word 'PUPPET'}

C = {Squares of the first four whole numbers}

D = {odd numbers divisible by 2}

Find :

i) $n(A)$

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

$n(A) = 9$

ii) $n(B)$

Ans- $B = \{P, U, E, T\}$

$n(B) = 4$

iii) $n(C)$

Ans- $C = \{0, 1, 4, 9\}$

$n(C) = 4$

iv) $n(D)$

Ans- $D = \{\}$ or $\emptyset$

$n(D) = 0$

3. State true or false for each of the following. Correct the wrong statement.

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

Sol- The given statement is False.

Correct statement is $n(A) = 1$.

ii) $n(\emptyset) = 1$

Sol- The given statement is false.

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

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

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

Sol- The given statement is False.

Correct statement is $n(B) = 4$.