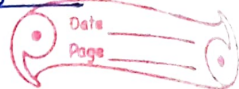


Name - SUBHASHREE PANIGRAHI

Class - VI, Sec - D, School no - 4658



Exercise - 10 - (D)

1) 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) i) Set of counting numbers between 5 and 6 - empty set.

ii) Set of odd numbers between 7 and 8 - not empty set.

iii) Set of odd numbers between 7 and 9 - empty set.

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

v) $\{0\}$ not empty set

3) i) $\{3, 5, 7\}$ and $\{5, 3, 7\}$ - equal sets

ii) $\{8, 6, 10, 12\}$ and $\{3, 2, 4, 6\}$ - equivalent sets

iii) $\{7, 7, 2, 1, 2\}$ and $\{1, 2, 7\}$ - equal sets

iv) $\{2, 4, 6, 8, 10\}$ and $\{a, b, d, e, m\}$ - equivalent sets

4) i) Set of integers - infinite

ii) { Multiples of 5 } - infinite

iii) { Fractions between 1 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) { ... } -4, -2, 0, 2, 4, 6, 8} - infinite

ix) { -12, -9, -6, -3, 0, 3, 6, ... } - infinite

x) { Number of points in a line segment } - infinite 4cm long

5) i) { prime numbers divisible by 2 } - not empty set

ii) { Negative natural numbers } - empty set

iii) { woman 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

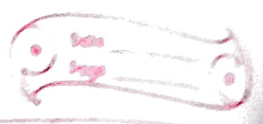
vii) Set of multiples of 3 that are more than 9 and less than 15 - not empty

- 6. i) { Natural numbers less than five } and { Letters of the word 'BOAT' - equivalent sets
- ii) { 2, 4, 6, 8, 10 } and { even natural numbers less than 12 } - equal sets
- iii) { 1, 3, 5, 7, ... } and set of odd natural numbers - equal sets
- iv) { Letters of the word MEMBER } and { Letters of the word 'REMEMBER' } - equal sets
- v) { Negative natural numbers } and { 5th day of a month } - equal sets
- vi) { Even natural numbers } and { odd natural numbers } - equivalent sets

- 7. i) { 2, 4, 6, 8, ..., 800 } - finite sets
- ii) { ..., -5, -4, -3, -2 } - infinite sets
- iii) { x : x is an integer between -60 and 60 } - finite sets
- iv) { NB. of electrical appliances working in your house } - finite sets
- v) { x : x is a whole number greater than 20 }
- vi) { x : x is a whole number less than 20 } - finite sets

- 8) i) $\{\dots, -8, 0, 8\}$ is a finite set. (false)
- ii) $\{-32, -28, -24, -20, \dots, 0, 4, 8, 16\}$ is an infinite set (false)
- iii) $\{x : x \text{ is a natural number less than } 1\}$ is the empty set. (True)
- iv) $\{\text{whole numbers between } 15 \text{ and } 16\} = \{\text{Natural numbers between } 5 \text{ and } 6\}$. (True)
- v) $\{\text{odd numbers divisible by } 2\}$ is the empty set. (True)
- vi) $\{\text{Even natural numbers divisible by } 3\}$ is the empty set. (False)
- vii) $\{x : x \text{ is positive and } x < 0\}$ is the empty set. (True)
- viii) $\{\dots, -5, -3, -1, 1, 3, 5, \dots\}$ is a finite set (False)

- 9) i) A = Girls with ages below 15 years and
B = Girls with ages below 15 years
Ans - Disjoint sets since girls with ages below 15 years and girls with ages below 15 years are not common.
- ii) C = Boys with ages above 20 years and
D = Boys with ages above 27 years
Ans - overlapping sets, since Boys above 27 years are also above 20 years.



iii) A = Natural numbers between 3 and 60
 B = Natural numbers between 5 and 59

ans) Overlapping sets, as natural numbers from 5 to 59 are common to both these sets.

iv) P = Students of Class IX studying in I.C.S.E. Board
 Q = Students of Class IX

ans) Overlapping sets, as students of class IX studying in I.C.S.E. Board are common to both these sets.

v) A = Natural numbers that are multiples of 3 and less than 30
 B = Natural numbers divisible by 4 and lying between 2 and 45

ans) Overlapping sets as natural numbers 12 is common to both the sets.

vi) P = Letters in the word 'ALLAHABAD' and
 Q = Letters in the word 'MUSORIE'

ans) Disjoint sets since no letter is common to both the sets.