

Exercise 10 (D)

1. i) ~~∅~~ Infinite

ii) Finite

iii) Infinite

iv) Finite

2. i) As there are no numbers between 5 and 6, i.e. \emptyset

ii) ~~Yes, it is~~ No, it is not an empty set.

iii) Yes, it is empty, i.e. ~~∅~~

1. i) Empty set.

ii) Not empty set.

2. i) equal and equivalent sets

ii) Equivalent sets

iii) Equal and equivalent sets.

iv) Equivalent sets

v) Equivalent set

vi) Equal or equivalent set

vii) Equal or equivalent set.

viii) Equal or equivalent set.

ix) Equal or equivalent set

x) Equivalent set.

3. i) finite

ii) infinite

iii) finite

iv) finite

v) infinite

vi) infinite

4. i) infinite

ii) Infinite

iii) Infinite

iv) Finite

v) Infinite

vi) Finite

vii) Finite

viii) Infinite

ix) Infinite

x) Infinite

5. i) Not empty

ii) Empty

iii) Empty

iv) Not empty

vi) Not empty

vii) Empty

viii) Not empty.

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Disjoint sets - If two given sets have no element in common, they are disjoint sets.

Example - $A = \{1, 3, 7\}$

$B = \{6, 9, 10\}$

As, A and B have no common elements, so, they are disjoint sets.

Overlapping sets

If two given sets have atleast one element in common, they are said to be overlapping sets.

Example - Set A = $\{5, 6, 7, 8, 9, 10\}$

Set B = $\{4, 6, 8, 10, 12\}$

As, so, set A and set B are overlapping sets.

8. i) False

ii) False

iii) True

iv) False

v) True

vi) False

vii) True

viii) False

9. i) Disjoint sets, as no girls can be of below 15 years and above 15 years at the same time.

ii) Overlapping sets, as some people may be of more than both 20 and 27 years ^{and above} in age, like, 28, 29, 30... etc.

iii) Overlapping sets, as some numbers come between both 35 and 60, and 50 and 80.

iv) Overlapping sets, as students studying in class IX ICSE board also come under students studying in class X.

n) Overlapping sets, as 24 comes between 20 and 43, is less than 30 and is divisible by 3 and 4.

n) Disjoint sets, as no letters is common between in ALLAHABAD and MUSCOORIE

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