

H.W

## Exercise 10(D)

1. i)  $\{3, 5, 7, \dots\}$

Ans  $\rightarrow$  It is an infinite set.

ii)  $\{1, 2, 3, 4\}$

Ans  $\rightarrow$  It is a finite set.

iii)  $\{\dots, -3, -2, -1, 0, 1, 2\}$

Ans  $\rightarrow$  It is an infinite set.

iv)  $\{20, 30, 40, 50, \dots, 20\}$

Ans  $\rightarrow$  It is a finite set.

2. i) Set of counting numbers between 5 and 6.

Ans  $\rightarrow$  It is an empty set.

ii) Set of odd numbers between 7 and 19.

Ans  $\rightarrow$  It is not an empty set.

iii) Set of odd numbers between 7 and 9.

Ans  $\rightarrow$  It is a empty set.

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

Ans  $\rightarrow$  It is a empty set.

v)  $\{0\}$

Ans  $\rightarrow$  It is not a empty set.

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

Ans  $\rightarrow$  It is a equal set.

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

Ans  $\rightarrow$  As the number of elements is same it is a equivalent set.

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

Ans  $\rightarrow$  It is a equal set.

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

Ans  $\rightarrow$  As the number of elements is same it is a equivalent set.

4-i) Set of integers.

Ans  $\rightarrow$  It is a infinite set.

ii)  $\{\text{Multiples of } 5\}$

Ans  $\rightarrow$  It is a infinite set.

iii)  $\{\text{Fractions between } 1 \text{ and } 2\}$

Ans  $\rightarrow$  It is a infinite set.

v) Set of trees in the world.  
Ans → It is a infinite set.

iv) Number of people in India.  
Ans → It is a finite set.

vi) Set of leaves on a tree.  
Ans → It is a finite set.

vii) Set of children in all the schools of Delhi.  
Ans → It is a finite set.

viii)  $\{ \dots, -4, -2, 0, 2, 4, 6, 8 \}$   
Ans → It is a infinite set.

ix)  $\{ -12, -9, -6, -3, 0, 3, 6 \dots \}$   
Ans → It is a infinite set.

x) { Number of points in a line segment 4 cm long }  
Ans → It is a finite set.

5.i) { Prime numbers divisible by 2 }  
Ans → It is an empty set.

ii) { Negative natural numbers }  
Ans → It is not an empty set.

iii) { Women with height 5 metre }  
Ans → It is an empty set.

iv) { Integers less than 5 }  
Ans → It is not empty set.

v)  $\{ \text{Prime numbers between 17 and 23} \}$

Ans  $\rightarrow$  It is not an empty set.

vi) Set of even numbers not divisible by 2.

Ans  $\rightarrow$  It is an empty set.

vii) Set of multiples of 3 that are more than 9 and less than 15.

Ans  $\rightarrow$  It is not an empty set.

6.i)  $\{ \text{Natural numbers less than five} \}$  and  $\{ \text{Letters of the word 'BOAT'} \}$

Ans  $\rightarrow$  As the number of elements is equal it is an equivalent set.

~~ii)  $\{ 2, 4, 6, 8, 10 \}$  and  $\{ \text{even natural numbers less than 12} \}$~~

~~Ans  $\rightarrow$  As the number of elements is equal it is an equivalent set.~~

ii)  $\{ 2, 4, 6, 8, 10 \}$  and  $\{ \text{even natural numbers less than 12} \}$

Ans  $\rightarrow$  It is an equal set.

iii)  $\{ 1, 3, 5, 7, \dots \}$  and set of odd natural numbers.

Ans  $\rightarrow$  It is an equal set.

iv)  $\{ \text{Letters of the word 'MEMBER'} \}$  and  $\{ \text{Letters of the word 'REMEMBER'} \}$

Ans  $\rightarrow$  It is an equal set.

v)  $\{ \text{Negative natural numbers} \}$  and  $\{ 50^{\text{th}} \text{ day of a month} \}$

Ans  $\rightarrow$  It is a equal set.

vi)  $\{ \text{Even natural numbers} \}$  and  $\{ \text{Odd natural numbers} \}$

Ans  $\rightarrow$  As the number of elements is same the set is equivalent.

7.i)  $\{2, 4, 6, 8, \dots, 800\}$

Ans  $\Rightarrow$  It is a finite set.

ii)  $\{\dots, -5, -4, -3, -2\}$

Ans  $\Rightarrow$  It is a infinite set.

iii)  $\{x: x \text{ is an integer between } -60 \text{ and } 60\}$

Ans  $\Rightarrow$  It is a infinite set.

iv)  $\{\text{No. of electrical appliances working in your house}\}$

Ans  $\Rightarrow$  It is a finite set.

v)  $\{x: x \text{ is a whole number greater than } 20\}$

Ans  $\Rightarrow$  It is a infinite set.

vi)  $\{x: x \text{ is a whole number lesser than } 20\}$

Ans  $\Rightarrow$  It is a finite set.

8.i)  $\{\dots, -8, -4, 0, 4, 8\}$  is an infinite set. True

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)  $\{ \text{Whole numbers between 15 and 16} \} = \{ \text{Natural numbers 5 and 6} \}$ . 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)  $A = \{ \text{Girls with ages below 15 years} \}$  and  
 $B = \{ \text{Girls with ages above 15 years} \}$

Ans  $\rightarrow$  It is a disjoint set.

ii)  $C = \{ \text{Boys with above 20 years} \}$  and  
 $D = \{ \text{Boys with above 27 years} \}$

Ans  $\rightarrow$  It is a overlapping set.

iii)  $A = \{ \text{Natural numbers between 35 and 60} \}$  and  
 $B = \{ \text{Natural numbers between 50 and 80} \}$

Ans  $\rightarrow$  It is a overlapping set.



iv)  $P = \{ \text{Students of Class IX studying in ICSE Board} \}$  and  
 $Q = \{ \text{Students of Class IX} \}$

Ans  $\rightarrow$  It is an overlapping set.

v)  $A = \{ \text{Natural numbers that are multiples of 3 and less than 3} \}$  and  
 $B = \{ \text{Natural numbers divisible by 4 and lying between 20 and 45} \}$

Ans  $\rightarrow$  It is an overlapping set.

vi)  $P = \{ \text{Letters in the word 'ALLAHABAD'} \}$  and  
 $Q = \{ \text{Letters in the word 'MUSSOORIE'} \}$

Ans  $\rightarrow$  It is a disjoint set.