

1) i)  $\{3, 5, 7, \dots\}$  = Infinite set

ii)  $\{1, 2, 3, 4\}$  = Finite set

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

iv)  $\{20, 30, 40, 50, \dots, 200\}$  = Finite set

2) 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 not divisible by 2. Empty

v)  $\{0\}$ . Not empty

3) i)  $\{3, 5, 7\}$  and  $\{5, 3, 7\}$  = Equal set

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

iii)  $\{7, 7, 2, 1, 2\}$  and  $\{1, 2, 7\}$  = Equal set

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

4) i) Set of integers = Infinite

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

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

iv)  $\{\text{Number of people in India}\}$  = Infinite

v) Set of trees in the world = Infinite

vi) Set of leaves on a tree = Infinite

vii) Set of ~~all~~ childrens in all the schools of Delhi. Infinite

viii)  $\{\dots, -4, -2, 0, 2, 4, 6, 8\}$  = Infinite

ix)  $\{-12, -9, -6, -3, 0, 3, 6, \dots\}$  = Infinite

x)  $\{\text{No of points in a line segment 4cm long}\}$  = Finite

5. i.) Not empty

ii.) Empty

iii.) ~~Not Empty~~ Empty

iv.) Not empty

v.) Not empty

vi.) Empty

vii.) Not empty

6. i) Equivalent sets  
ii) ~~Equivalent sets~~ Equal sets  
iii) Equal sets  
iv)  
v)  
vi) Equivalent sets

7. i) Finite set  
ii) Infinite set  
iii) Finite set  
iv) Finite set  
v) Finite set  
vi) Finite set

8. i) False  
ii) False  
iii) True  
iv) True  
v) True  
vi) False  
vii) False  
viii) True

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- (9. i) Disjoint because no girl can be below or above 15 years at the same time.
- ii) Set C and D are overlapping because boys ~~can~~ can be ~~above~~ above the age of 20 and 27 years.
- iii) Set A and B are overlapping because numbers from 51 to 59 come between 30 and 60 and numbers from 31 to 49 come under 50 to 80.
- iv) Sets P and Q are overlapping because class IX is common to both the sets.
- v) Sets A and B are overlapping number 24 is common to both the sets.
- vi) Sets P and Q are disjoint because number of element is not common to both the sets.