KALYAN ACADEMY

BHARATH NAGAR, HYD-18

SETS | WORK SHEET -2

1. Write the set A = { x : x is an integer, −1 < x < 4} in roster form?
2. Write the set A = {2/3, 3 /4, 4/5, 5/6, 6/7, 7/8} in set builder form?
3. Write the set B = {3, 9, 27, 81} in set-builder form?
4. Which of the following are empty sets? Justify.
   a) A = { x : x N and 3 <x <4} b) B = { x : x ε N and $x^2 = x$}
5. Are sets A = {−2, 2}, B = { x : x ε Z, $x^2 - 4 = 0$} equal? Why?
6. Write all the possible subsets of A = {p, q}, B = {2,3,4,5}, C = { a, b, c, d}
7. Are sets A = {1, 2, 3, 4}, B = {x : x ε N and 5 ≤x ≤ 7} disjoint? Why?
8. If μ = {1,2,3,4,5,6,7,8,9}, A = {2,3,5,7,9}, B = { 1,2,4,6}, verify
   a) $(A \cup B)^1 = A^1 \cap B^1$
   b) $B - A = B \cap A^1 = B - (A \cap B)$
9. A survey shows that 84% of the Indians like grapes, whereas 45% like pineapple. What percentage of Indians like both grapes and pineapple?
10. In a survey of 450 people, it was found that 110 play cricket, 160 play tennis and 70 play both cricket as well as tennis. How many play neither cricket nor tennis?
11. In a group of 800 people, 500 can speak Hindi and 320 can speak English. Find
    a) How many can speak both Hindi and English?
    b) How many can speak Hindi only?
12. Draw appropriate Venn diagram for each of the following
    a) $(A \cup B)^1$
    b) $(A \cap B)^1$
    c) $A^1 \cap B^1$
    d) $A^1 \cup B^1$
13. If A = {1, 2, 3, 4, 5}, B = {1, 3, 5, 8}, C = {2, 5, 7, 8}, verify that
    a) $A - (B \cup C) = (A - B) \cap (A - C)$ b) $A - (B \cap C) = (A - B) \cup (A - C)$
    c) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ d) $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$