THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

AIM HIGH, TOGETHER WE FLY

CLASS 12   **MATHEMATICS**
WS(1)

SETS

1) Write all subsets of set A = {1,2,3}

2)A = { 1,2,3,4,5} , B = {2,4,6,8}. Find A - B

3)A = { 1,2,3,4,5}, B = {1,3,5,8}, C = {2,5,7,8}. Verify that A - (B∪C)= (A-B)∩(A-C)

4)Write the set A = {1,4,9,16,25.......} in set-builder form.

5) Write the set A = {1/2,2/3,3/4.......,9/10} in set-builder form.

6) Write the set A = {5 , 25 , 125 , 625} in set-builder form.

7)   n{ p[p(p(φ))]} = -- - - - - --

8)   T = {x: x ∈ R and x ∈ / Q }.Which set is represented by T?

9)   Write the set {x : x ∈R , -5< x ≤ 7 } in the form of interval.

10) n(A) = 8 , n(B) = 7 and n(A∪B) = 12 . Find

      a)   n (B-A)   b) n [p(A)]   c) n [(A-B) ∪ (B-A)]

11) n (A-B) = 14 + x , n (B-A) = 3x , n (A∩B) = x and n(A∪B) = 74.Find n(A) & n(B).

12) U = {1,2,3,4,5,6,7,8,9,10} , A = { 7,8,9} , B = { 2,5,6,8 } , C = { 1,2,3,6,7,9 }. Find

      a)   A − B   b) P(A)   c) (A∪B)'   d) A ∩ (B − C)

13) Let A = Set of all rational numbers and B = {X : X^2-4X+2=0}.Then find A-B, B-A, A∩B.

14) Draw the venn diagrams to illustrate the following relationship among the sets E,M and U, where E is the set of students studying English in a school, M is the set of students studying Mathematics in the same school, U is the set of all students in that school.

      a)   All the students who study Mathematics study English ,But some students who study English do not study Mathematics.

      b)   There is no student who studies both Mathematics and English.

      c)   Some of the students study Mathematics but do not study English,some study English but do not study Mathematics, and some study both.

      d)   Not all students study Mathematics, but every student studying English studies Mathematics.

15) Write the following sets in set builder form:-

      a)   A = { 1/3 , 3/5 , 5/7 , 7/9 , 9/11 , 11/13 }

      b)   B = { 2 , 5 , 10 , 17 , 26 , 37 , 50 }

16) Let A , B and C be three sets .If A ∈ B and B subset of C , Is it true that A subset of C ? if not ,give example.

17) If A = { 1,2,3,4,5,6 } , B = { 2,3,5,6 } and C = { 1,3,5 } . Verify that

      A-   (B ∪C) = (A – B) ∩ (A – C)

18) Using venn diagram prove that A∩ (B∪C) = (A∩B) ∪(A∩C)

19) Using venn diagram prove that (B∪C)' = B' ∩ C'

20) Draw a venn diagram to represent the given sets with elements and shade A – B- C in it.

      U = { a , b , c , d , e , f , g , h , i , j , k }

A = { c , e , f , h , i , j }

B = { a ,b , d , f , i }

C = { a ,c , e , g , h , i }

21) Verify De'Morgans law :-

U = { 1,2,3,4,5,6,7,8,9,10 }

A = { 1,3,4,5,7,9,10,}

B = { 1,3,4,5,7,8,10 }

22) Show that A∪B = A∩B implies A = B.

23) For any sets A & B , Show that P(A∩B) = P(A) ∩ P(B)

22)U={1,2,3,4,5,6,8}, A = {2,3,4}, B = {3,4,5}.Show that$(A \cup B)' = A' \cap B'$ and (A∩B)'= A'∪B'

23)A and B are two sets such that n(A) = 3 and n(B) = 6.

  1) Find the minimum value of n(AUB).   2) Find the maximum value of n(AUB).

24)A and B are two sets such that n(A-B) = 20+x , n(B-A) = 3x and n(A∩B) = x+1

  If n(A) = n(B) , i) find x.   ii) find n(AUB)

25)n(U) = 800, n(A) = 200 , n(B) = 300 and n(A∩B) = 100 . Find n(A'∩B').