

PROJECT WORK

I Preliminary information :-

1. Name of the student : R. Lokeswari
2. class : 10th class
3. Roll No : 12
4. Name of the lesson/unit : Sets

II Detailed information of the project :-

1. Title of the project :-

Solving daily life problem using venn diagram and verifying formula (relation)

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

2. Objectives of the project :-

- * Representing the data in venn-diagrams.
- * verifying the relation (formula) of two sets

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

3. Materials used :-

Paper, pens, compass for drawing circles etc.

4. Tools :-

(i) Collection of information :-

Collection of data regarding to favourite TV channels (Movies and News channels) from 20 persons.

(ii) Comparison and identification :-

Comparing elements in both sets and identifying common elements.

Procedure:-

Collection of data:-

I collected information regarding to favourite TV channels of 20 persons in my village. Persons are denoted by numbers 1, 2, 3... instead of their names

Persons	Most watching channels (favourite)	
	News channels	Movie channels
1	✓	
2	✓	✓
3		✓
4	✓	
5		✓
6		✓
7	✓	
8	✓	
9	✓	✓
10		✓
11	✓	
12	✓	
13	✓	✓
14	✓	
15	✓	
16	✓	✓
17		✓
18	✓	
19		✓
20	✓	

Problem solving :-

No. of persons interested in watching News channels } = $n(E) = 14$

No. of persons interested in watching Movie channels } = $n(M) = 10$

No. of persons interested in watching both news & movie channels } = $n(ENM) = 4$

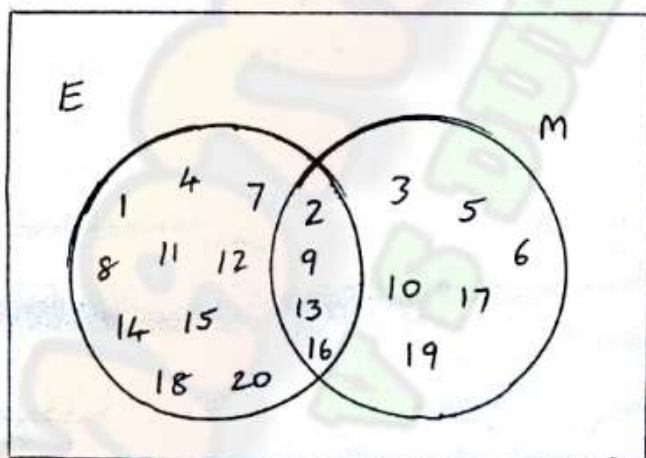
Total number of persons = $n(E \cup M) = 20$

(Treating each and every member interested in any one of the channels)

$$\begin{aligned}\therefore n(E) + n(M) + n(ENM) &= 14 + 10 - 4 \\ &= 24 - 4 \\ &= 20 \\ &= n(E \cup M)\end{aligned}$$

$$\therefore n(E \cup M) = n(E) + n(M) + n(ENM)$$

Representation :-



'E' - set of persons interested in watching News channels

'M' - set of persons interested in watching Movie channels

Conclusion :-

From venn diagram

No. of persons watching only
News channels (not movie channels) } = 10

No. of persons watching only
movie channels (not news channels) } = 6

No. of persons watching both
News and movie channels } = 4

Since most of the persons are interested in watching News channels, cable operator is advised to give more News channels to satisfy their customers.

Doubts & questions :-

If three sets are taken, how do we represent in venn diagrams?

Acknowledgement :-

I convey my sincere thanks to who are co-operate and putting their earnest efforts in completing the project.

Reference books :-

* APSCERT, Maths text book (10th class)

* Class 10, CBSE Maths text book

Signature of the student :-

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