

11/12/23

Quiz - 2 :-

① Survey about favourite animal :-

30 people - cat, 40 people - dog, 20 people - Cow

Mode  $\rightarrow$  ?

40 people - dog

② A survey of no of pets in a town -

30% people had 0, 40% 1, 10% - 2, 20% - 3

Average number of pets ?

|       |       |       |       |
|-------|-------|-------|-------|
| 30% 0 | 40% 1 | 10% 2 | 20% 3 |
| $Q_1$ | $Q_2$ | $Q_3$ | $Q_4$ |

Wrong approach

Should be Weighted Average.

30% - 0

30 - 0

40% - 1

40 - 40 pets

10% - 2

10 - 20 pets

20% - 3

20 - 60 pets

100 people - 120 pets

$$\frac{120}{100} = 1.2 \text{ Average number of pets}$$

Probability :-

how likely something is to happen

Sample Set / space :-

Collection of or set of all possible outcomes

① What will be the size of Sample space if we roll a die and toss a coin simultaneously?

die - 6  
(1 to 6)

coin - 2  
(H, T)

(1, H), (2, H), (3, H), (4, H), (5, H), (6, H)  
(1, T), (2, T), (3, T), (4, T), (5, T), (6, T)

Total Sample Space - 12

Which of the following is not an Event  
② if we roll a die?

1, 3

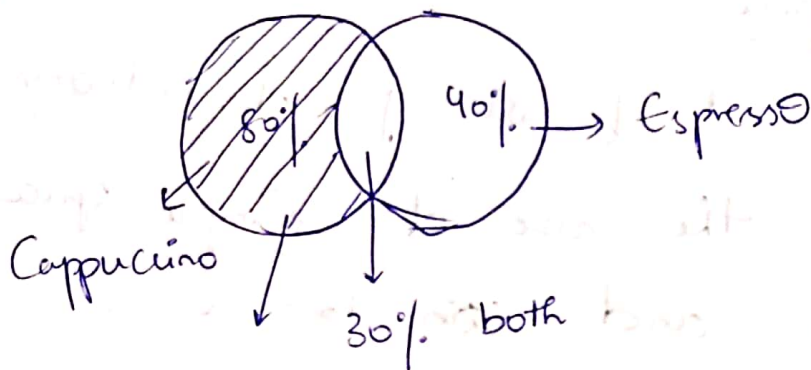
1, 3, 5

1, 3, 5, 7

③ 80% people like Cappuccino  
40% people like espresso and  
30% like both

What percentage of people like Cappuccino but  
do not like espresso?

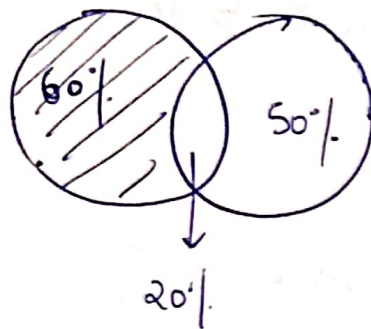
• 50 • 40 • 30 • 80



$$80 - 30 = 50\%$$

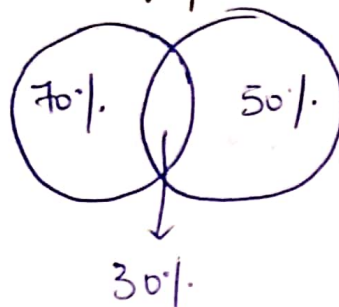
④ 60% people uses Swiggy, 50% uses Zomato,  
20% use both.

What percentage use Swiggy but not  
Zomato?



$$60 - 20 = 40\%$$

- ⑤ It is known that 70% people use Amazon 50% use flipkart, 30% people use both. What percentage of people use neither Amazon nor flipkart?



Amazon - 40%

flipkart - 20%

both - 30%

Uses - 90%

not use - 10%

Mutually Exclusive -

$$a = \{1, 3, 4\}$$

$$b = \{8, 9, 10\}$$

$a \cap b = \phi$  There is no intersection b/w

$a$  and  $b$

So  $a$  and  $b$  are mutually Exclusive sets.

Example Problem for probability:-

A bag full of balls. In that bag 6 Red, 5 green, 2 blue balls.

Probability of getting red ball

$$= \frac{6}{13}$$

$$\text{Green} = \frac{5}{13} \quad \text{blue} = \frac{2}{13}$$

Now I pick 1 Red, 1 green

What is the probability of getting a blue in third Pick

$$\frac{2}{11}$$

This scenario is Conditional Probability.

Scenario 2 :-

What profit is the Company going to make next year provided that the loss of last year was 30% and gain was 50%.

⑥ Which of the following represent mutually Exclusive sets.

Youtube Premium vs Non premium Users —  $\phi$

People who like Cappacino/Expresso

Users of Swiggy vs Zomato

Users of Amazon vs flipkart



⑦ There are 4 green balls, 6 yellow balls, 2 blue balls in a bag. A random ball is chosen. Find the probability that a yellow or blue ball is chosen

$$\text{Yellow or blue ball} = \frac{6}{12} + \frac{2}{12} = \frac{8}{12}$$

⑧ In a NPS Survey, it is seen that  
90% are either promoter or neutral  
30% are neutral or detractor  
What percentage of people are neutral?

20      40      10      30