

## Probability Ex 13.1 Q43

#### Answer:

GIVEN: A lot of 20 bulbs contain 4 defective ones. One bulb is drawn at random from the lot TO FIND: Probability that it is defective

Total number of bulbs is 20

(i) Total numbers of bulbs which are defective is 4

We know that PROBABILITY =  $\frac{\text{Number of favourable event}}{\text{Number of favourable event}}$ 

Total number of event

Hence probabilities of bulbs which are defective is  $\frac{4}{20} = \boxed{\frac{1}{5}}$ 

(ii) Suppose the bulb drawn in case (i) is not defective and not replaced

Then total number of bulbs will be 19.

Total numbers of bulbs which are not defective is 20-4=15

We know that PROBABILITY =  $\frac{\text{Number of favourable}}{\text{Number of favourable}}$  event

Total number of event

Hence probabilities of bulbs which are not defective are  $\frac{15}{19} = \frac{15}{19}$ 

# Probability Ex 13.1 Q44

### Answer:

GIVEN: A box contains 90 discs which are numbered from 1 to 90.If one disc is drawn at random

TO FIND: Probability that it bears

- (i) a two digit number
- (ii) a perfect square
- (iii) a number divisible by 5

Total number of discs numbered is 90

(i) disc marked a two digit numbers are 90-10+1=81

Total number of disc marked two digit numbers from 1 to 90 are 81

We know that PROBABILITY =  $\frac{\text{Number of favourable event}}{\text{Number of favourable event}}$ 

Total number of event

Hence probability of getting disc marked with two digit numbers from 1 to 90 is  $\frac{81}{90} = \frac{9}{10}$ 

(ii) disc marked a perfect squared numbers are 1,4,9,16,25,36,49,64,81

Total number of disc marked perfect square numbers from 1 to 90 are 9

We know that PROBABILITY =  $\frac{\text{Number of favourable event}}{\text{Total PROBABILITY}}$ 

Total number of event

Hence probability of getting disc marked with perfect square numbers from 1 to 90 is  $\frac{9}{90} = \frac{1}{10}$ 

(iii) disc marked with a number divisible by 5 are

5,10,15,20,25,30,35,40,45,50,55,60,65,70,75,80,85,90

Total number of disc marked perfect square numbers from 1 to 90 are 18

We know that PROBABILITY =  $\frac{\text{Number of favourable event}}{\text{Number of favourable event}}$ 

Total number of event

Hence probability of getting disc marked number divisible by 5 from 1 to 90  $\frac{18}{90} = \frac{1}{5}$ 

### Answer:

GIVEN: A lot consists of 144 ball pens of which 20 are defective and others good

Nuri will buy a pen if it is good but will not buy if it is defective. The shop keeper draws one pen at random and gives it to her

TO FIND: Probability that

- (i) She will buy
- (ii) She will not buy

Total number of bulbs is 144

(i) Total numbers of bulbs which are non defective is 144 - 20 = 124

We know that PROBABILITY = Number of favourable event

Total number of event

Hence probabilities that she will buy a good pen which is not defective is  $\frac{124}{144} = \frac{\boxed{31}}{36}$ 

(ii) We know that sum of probability of occurrence of an event and probability of non occurrence of an

$$P(E) + P(\overline{E}) = 1$$

$$\frac{31}{36} + P(\overline{E}) = 1$$

$$P(\overline{E}) = 1 - \frac{31}{36}$$

$$P(\overline{E}) = \frac{5}{36}$$

$$P(\overline{E}) = \frac{5}{36}$$

Hence probabilities that she will not buy a good pen is equal to =  $\frac{5}{36}$ 

\*\*\*\*\*\*\*\*\* END \*\*\*\*\*\*\*\*