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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

(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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

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 from the box

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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

(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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

(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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

Probability Ex 13.1 Q45

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 = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

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

(ii) We know that sum of probability of occurrence of an event and probability of non occurrence of an event is 1.

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

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

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

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

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

********** END **********