Probability Ex 13.1 Q50

Answer :

GIVEN: Cards are marked with numbers 13 to 60 are placed in a box and mixed thoroughly. If one card is drawn at random from the box

TO FIND: Probability that it bears

(i) A number divisible by 5

(ii) A perfect square

Total number of cards is $60-13+1=48$

(i) Cards marked with a number divisible by 5 are

15, 20, 25, 30, 35, 40, 45, 50, 55 and 60

Total numbers of cards marked numbers divisible by 5 from 13 to 60 is 10

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

Hence probability of getting card marked with numbers divisible by 5 from 13to60 is $\dfrac{10}{48}=\boxed{\dfrac{5}{24}}$

(ii) Cards marked a perfect squared numbers are 16, 25, 36 and 49

Total number of disc marked with perfect square from 13 to 60 is 4

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 13 to 60 is $\dfrac{4}{48}=\boxed{\dfrac{1}{12}}$

Probability Ex 13.1 Q51

Answer :

GIVEN: A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball from the bag is twice that of a red ball,

TO FIND: the number of blue balls in the bag.

Let the probability of getting a red ball be $P(E)=x$

The probability of not getting a red ball or getting a blue ball be $P(\overline{E})=2x$

We know that sum of probability of occurrence of an event and probability of non occurrence of an event is 1.So

$$P(E)+P(\overline{E})=1$$
$$x+2x=1$$
$$3x=1$$
$$x=\frac{1}{3}$$

Hence the probability of getting a red ball is $\dfrac{1}{3}$

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

$$\frac{1}{3}=\frac{6}{\text{Total number of balls}}$$
$$\Rightarrow \text{Total number of balls}=18\text{balls}$$

Hence total number of blue balls = total number of balls –red balls

$$=18-6$$
$$\boxed{=12\text{ balls}}$$

Hence total number of blue balls is $\boxed{12\text{ balls}}$

Probability Ex 13.1 Q52

Answer :

GIVEN: Tickets are marked with one of the numbers 11, 12, 13…30 are placed in a bag and mixed thoroughly. One ticket is picked at random.

TO FIND: Probability of getting

(i) multiple of 7

(ii) greater than15 and multiple of 5

Total number of cards is $30-11+1=20(\text{since 11 and 30 both are included})$

(i) Numbers that are multiple of 7 are 7, 14, 21 and 28

Total numbers that are multiple of 7 from 11 to 30 is 4

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

Hence probability of getting number that is multiple of 7 from 11 to 30 is $\frac{4}{20}=\boxed{\frac{1}{5}}$

(ii) Numbers that are greater than 15 and multiple of 5 are 20,25,30

Total numbers that are greater than 15 and multiple of 5 from 11 to 30 is 3

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

Hence probability of getting numbers that is greater than 15 and multiple of 5 from 11 to 30 = $\boxed{\frac{3}{20}}$

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