Probability Ex 13.1 Q27

Answer :

GIVEN: Two customers are visiting a particular shop in the same week (Monday to Saturday). Each is equally likely to visit the shop on any one day as on another.
TO FIND: Probability that both will visit the shop on:
(i) The same day
(ii) Different days
(iii) Consecutive days
Two customers can visit the shop on two days in $6\times6=36$ ways.
Hence total number of ways =36
(i) Two customer can visit the shop on any day of the week i.e.
MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY
Favorable number of ways = 6
We know that PROBABILITY = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$
Hence probability of the customer visiting the shop on the same day = $\dfrac{6}{36}=\boxed{\dfrac{1}{6}}$

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

$$P(\mathrm{E})+P(\bar{\mathrm{E}})=1$$
$$\frac{1}{6}+\mathrm{P}(\bar{\mathrm{E}})=1$$
$$\mathrm{P}(\bar{\mathrm{E}})=1-\frac{1}{6}$$

Hence probability of the customer visiting the shop on the different day is $\boxed{\dfrac{5}{6}}$

(iii) Two costumer can visit the shop in two consecutive days in the following ways:
(MONDAY, TUESDAY), (WEDNESDAY, THURSDAY), (THURSDAY, FRIDAY) (FRIDAY, SATURDAY)
Favorable number of ways =5
We know that PROBABILITY = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$
Hence probability of the customer visiting the shop on two consecutive days = $\boxed{\dfrac{5}{36}}$

Probability Ex 13.1 Q28

Answer :

GIVEN: In a class there are 18 girls and 16 boys, the class teacher wants to choose one name. The class teacher writes all pupils name on a card and puts them in basket and mixes well thoroughly .A child picks one card
TO FIND: The probability that the name written on the card is
(i) The name of a girl
(ii) The name of a boy
Total number of students in the class $18+16=34$
(i) Total numbers of girls are 18 hence favorable cases are 18
We know that PROBABILITY = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$
Hence probability of getting a name of girl on the card picked = $\dfrac{18}{34}=\boxed{\dfrac{9}{17}}$
(ii) Total numbers of boys are 16 hence favorable cases are 16
We know that PROBABILITY = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$
Hence probability of getting a name of boy on the card picked = $\dfrac{16}{34}=\boxed{\dfrac{8}{17}}$

Probability Ex 13.1 Q29

Answer :

When we toss a coin then the outcomes have the same probability for its occurrence they are equally likely events. So, the result of an individual coin toss is completely unpredictable.

Probability Ex 13.1 Q30

Answer :

GIVEN: A number is selected from the numbers 1,2,2,3,3,3,4,4,4,4

TO FIND: Probability that the selected number is the average of the numbers

Total numbers are 10

Average of numbers is

$$= \frac{1+2+2+3+3+3+4+4+4+4}{10}$$

$$= \frac{30}{10}$$

$$= 3$$

Total numbers of numbers which are average of these numbers are 3

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

Hence Probability that the selected number is the average of the numbers = $\boxed{\frac{3}{10}}$

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