Chapter 25: Probability
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Exercise 25A

Question 1:
Solution:

(i) A coin is tossed. The possible outcomes are H, T.
(ii) Two coins are tossed simultaneously. The possible outcomes are HH, HT, TH, and TT.
(iii) A die is thrown. The possible outcomes are 1, 2, 3, 4, 5, and 6.
(iv) From a well-shuffled deck of 52 cards, one card is drawn at random. The number of all possible outcomes is 52.

Question 2:
Solution:

The probability of getting a tail in a single throw of a coin is $\frac{1}{2}$

Question 3:
Solution:
The possible outcomes of throwing two coins are HH, HT, TH, TT.

(i) The probability of getting both tails is $\frac{1}{4}$.

(ii) The probability of getting at least 1 tail is $\frac{3}{4}$.

(iii) The probability of getting at the most 1 tail is $\frac{3}{4}$.

Question 4:
Solution:

(i) The probability of getting a white ball is $\frac{4}{9}$.

(ii) The probability of getting a blue ball is $\frac{5}{9}$.

Question 5:
Solution:

(i) The probability that the ball drawn is green is $\frac{4}{15}$

(ii) The probability that the ball drawn is white is $\frac{5}{15}=\frac{1}{3}$

(iii) The probability that the ball drawn is non-red is $\frac{9}{15}=\frac{3}{5}$

Question 6:

Solution:

The probability of getting a prize is $\frac{10}{30}=\frac{1}{3}$

Question 7:

Solution:

(i) The probability that the bulb drawn is defective is $\frac{8}{100}=\frac{2}{25}$

(ii) The probability that the bulb drawn is non-defective is $\frac{92}{100}=\frac{23}{25}$

Question 8:

Solution:

(i) The probability of getting 2 is $\frac{1}{6}$

(ii) The probability of getting a number less than 3 is $\frac{2}{6}=\frac{1}{3}$

(iii) The probability of getting a composite number is $\frac{2}{6}=\frac{1}{3}$

(iv) The probability of getting a number not less than 4 is $\frac{3}{6}=\frac{1}{2}$

Question 9:

Solution:

Since 118 ladies dislike coffee of the 200 ladies, the probability is $\frac{118}{200}=\frac{59}{100}$.

Question 10:

Solution:

(i) The probability that the number on the ball is a prime number is $\frac{8}{19}$ as there are 8 prime numbers namely, 2,3,5,7,11,13,17,19.

(ii) The probability that the number on the ball is an even number is $\frac{9}{19}$ as the even numbers between 1 and 19 are 2,4,6,8,10,12,14,16,18.

(iii) The probability that the number on the ball is a number divisible by 3 is $\frac{6}{19}$ as there are six multiples of 6 between 1 and 19.

Question 11:
Solution:

(i) The probability that the card drawn is a king is $\frac{4}{52} = \frac{1}{13}$

(ii) The probability that the card drawn is a spade is $\frac{13}{52} = \frac{1}{4}$

(iii) The probability that the card drawn is a red queen is $\frac{2}{52} = \frac{1}{26}$

(iv) The probability that the card drawn is a black 8 is $\frac{2}{52} = \frac{1}{26}$

Question 12:
Solution:

(i) The probability that the card drawn is a 4 is $\frac{4}{52} = \frac{1}{13}$

(ii) The probability that the card drawn is a queen is $\frac{4}{52} = \frac{1}{13}$

(iii) The probability that the card drawn is a black card is $\frac{26}{52} = \frac{1}{2}$

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Exercise 25B

Question 1:
Solution: (b)

The probability of getting a green sector among the 8 sectors is $\frac{5}{8}$.

Question 2:
Solution: (c)

The probability of getting 1,2,3 among the 8 cards is $\frac{3}{8}$.

Question 3:
Solution: (b)

When two coins are tossed simultaneously the probability of getting one head and one tail is $\frac{1}{2}$.

Question 4:
Solution: (d)

Since there are 2 red balls out of the total 5, the probability is $\frac{2}{5}$.

Question 5:
Solution: (b)

The probability of getting 6 will be $\frac{1}{6}$.

Question 6:
Solution: (a)

Since there are equal number of odd and even numbers in a die, its probability will be $\frac{1}{2}$.

Question 7:
Solution: (c)

Since there are four queens in the deck of 52 cards, the probability is $\frac{4}{52} = \frac{1}{13}$.

Question 8:
Solution: (b)

Since two black sixes are there in a deck of 52 cards, the probability is $\frac{2}{52} = \frac{1}{26}$.