

Chapter – 05

Data Handling

Exercises 5.3

Question 1.

List the outcomes you can see in these experiments.

- (a) Spinning a wheel
- (b) Tossing two coins together



Answer:

(a)

The List of outcomes in spinning a wheel are as follows:

A, A, B, C, D

but the outcomes cannot repeat itself, so the outcomes are A, B, C, D

(b) There will be following outcomes of Head and Tail if two coins are tossed together:

HH, HT, TH, TT

Question 2.

When a die is thrown, list the outcomes of an event of getting

- (i) (a) a prime number

(b) not a prime number

(ii) (a) a number greater than 5

(b) a number not greater than 5

Answer:

List of events when a die is thrown are as follows:

1, 2, 3, 4, 5, 6

(i) (a) List of Prime Numbers: 2, 3, 5

(b) List of Non-prime numbers: 1, 4, 6

(ii) (a) List of Number >5 : 6

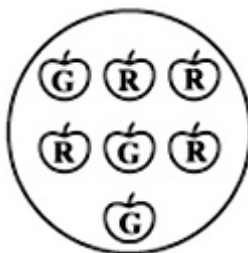
(b) List of Number Not greater than 5: 1, 2, 3, 4, 5

Question 3. Find the.

A. Probability of the pointer stopping on D in (Question 1-(a))?

B. Probability of getting an ace from a well shuffled deck of 52 playing cards?

C. Probability of getting a red apple. (See figure below)



Answer:

A. Total number of events = 5

No. of favourable outcome = 1

Hence, probability of favourable outcome

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{1}{5}$$

B. Total Number of events = 52

Number of Favourable outcomes = 4 (As we know that there are 4 aces in a pack of cards)

Probability of favourable outcome:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{4}{52}$$

$$= \frac{1}{13}$$

C. Total number of events = 7

Number of Favourable outcomes = 4

Probability of favourable outcomes:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{4}{7}$$

Question 4. Numbers 1 to 10 are written on ten separate slips (one number on one slip), kept in a box and mixed well. One slip is chosen from the box without looking into it. What is the probability of.

- (i) getting a number 6?
- (ii) getting a number less than 6?
- (iii) getting a number greater than 6?
- (iv) getting a 1-digit number?

Answer: Total number of events = 10

Number of favourable events for getting number 6 = 1

Now,

Probability of getting a 6:

$$\begin{aligned} &= \frac{\text{Favourable outcomes}}{\text{total outcomes}} \\ &= \frac{1}{10} \end{aligned}$$

Probability of getting number less than 6:

$$\begin{aligned} &= \frac{\text{Favourable outcomes}}{\text{total outcomes}} \\ &= \frac{5}{10} \\ &= \frac{1}{2} \end{aligned}$$

Probability of getting number greater than 6:

$$\begin{aligned} &= \frac{\text{Favourable outcomes}}{\text{total outcomes}} \\ &= \frac{4}{10} \\ &= \frac{2}{5} \end{aligned}$$

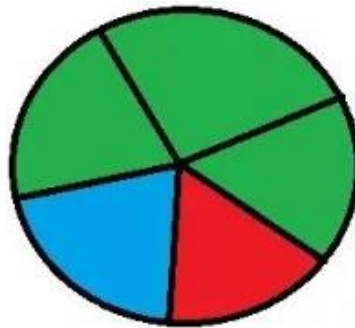
Probability of getting a one digit number:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{9}{10}$$

Question 5. If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting a green sector? What is the probability of getting a non blue sector?

Answer:



Total number of events = 5 (because there are total 5 sectors)

Probability of getting a green sector:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{3}{5}$$

Now,

Probability of getting a non-blue sector:

$$= 1 - (\text{Probability of getting Blue Sector})$$

$$= 1 - \frac{1}{5}$$

$$= \frac{5-1}{5}$$

$$= \frac{4}{5}$$

Question 6. Find the probabilities of the events given in Question 2.

Answer: In throwing a die, possible outcomes of the number appearing on top face = 1, 2, 3, 4, 5, 6

Prime numbers in the outcomes = 2, 3, 5

Non prime numbers in the outcomes = 1, 4, 6

Numbers greater than 5 = 6

Numbers not greater than 5(including 5) = 1, 2, 3, 4, 5

Probability of getting a prime number:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{3}{6}$$

$$= \frac{1}{2}$$

Probability of getting a non-prime number:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{3}{6}$$

$$= \frac{1}{2}$$

Probability of getting number greater than 5:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{1}{6}$$

Probability of getting a number not greater than 5:

$$= \frac{\text{Favourable outcomes}}{\text{total outcomes}}$$

$$= \frac{5}{6}$$