

NCERT SOLUTIONS CLASS-8 MATHS

CHAPTER-5 EXERCISE-5.3

1. List the outcomes in details, which you see in these types of experiments -:

(i) *Spinning a wheel*

3.1

(ii) *Tossing two coins at a time*

Answer:

(i) From the figure we can notice that there are four letters P, Q, R and S in the wheel. So the possible outcomes are P, Q, R and S.

(ii) By tossing two coins each other, we will find four possible outcomes i.e. HH, HT, TH, TT respectively.

[Here H = Head and T = Tails]

2. List the outcomes of an event when a dice is thrown:

(a) (i) *A prime number* (ii) *Not a prime number*

(b) (i) *A number greater than 6* (ii) *A number not greater than 6*

Answer:

When a dice is thrown, there are seven possible outcomes, i.e., 1,2,3,4,5,6 and 7.

(a)

(i) Outcomes of event of getting a prime number are 2, 3, 5 and 7.

Hence, these are the outcomes of an event of getting a prime number on the face of a dice.

(ii) Outcomes of event of not getting a prime number are 1, 4 and 6.

Hence, these are the outcomes of an event of not getting a prime number on the face of a dice.

(b)

(i) Outcomes of event of getting a number greater than 6 is 7, which comes on the face of the dice.

(ii) Outcomes of event of not getting a number greater than 6 are 1, 2, 3, 4, 5 and 6.

3. Find out:-

(i) *Prospect of the pointer stopping on 'S' in (Question 1 (i))*

(ii) *Prospect of getting an ace from a well shuffled deck of 52 playing cards.*

(iii) *Prospect of getting a red apple which is shown in the figure below.*

3.3.1

Answer:

(i) In a spinning wheel, there are five pointers P, P, Q, R, S. So there are five outcomes. Pointer stops at S which is one outcome.

3.3.2

Therefore, prospect that the pointer will stop at region S = $\frac{1}{5}$

(ii) There are 4 aces in a deck of 52 playing cards. So, there are four events of getting an ace.

So, the probability of getting an ace card = $\frac{4}{52} = \frac{1}{13}$

(iii) There are a total of 7 apples, out of which, 4 are red and 3 are green.

So, probability of getting a red apple = $\frac{4}{7}$

4. Numbers 1 to 12 are written on ten separate paper slips, one number on one slips kept in a box and mixed well. A single paper slip is picked from the box without looking into it. What is the probability of:

- (a) Obtaining a number 8?
- (b) Obtaining a number less than 8?
- (c) Obtaining a number greater than 8?
- (d) Obtaining a 1-digit number?

Answer:

(a) There are 12 paper slips in the box. However, 8 is written only on a single slip.

Therefore, probability of getting a number 8 = $\frac{1}{12}$

(b) The numbers less than 8 are 1,2,3,4,5,6,7. So there are 7 outcomes.

Therefore, probability of getting a number less than 8 = $\frac{7}{12}$

(c) The numbers greater than 8 are 9, 10, and 11. So there are 3 possible outcomes.

Therefore, probability of getting a number greater than 8 = $\frac{3}{12} = \frac{1}{4}$

(d) There are 9 numbers which are single digit numbers.

1,2,3,4,5,6,7,8 and 9.

Therefore, probability of getting a 1-digit number = $\frac{9}{12} = \frac{3}{4}$

5. A spinning wheel consisting of 1 blue sector, 3 green sectors and 1 red sector, Find out the probability of getting a green sector and also the probability of getting a none-blue sector.

Answer:

Total sectors = 3 + 1 + 1 = 5

There are five sectors. Three sectors are green out of five sectors.

Hence, probability of getting a green sector = $\frac{3}{5}$

We will get a non-blue sector when we will get either a green sector or a red sector.

There is one blue sector out of five sectors.

Hence, Non-blue sectors = $5 - 1 = 4$ sectors

Therefore, probability of getting a non-blue sector = $\frac{4}{5}$

6. Find out the prospect of the events given in Question 2.

Answer:

When a dice is thrown, there are seven possible outcomes, i.e., 1,2,3,4,5,6 and 7.

(a)

(i) 2, 3, 5 and 7 are prime numbers. So there are 4 outcomes out of 7.

Therefore, probability of getting a prime number = $\frac{4}{7}$

(ii) 1, 4, 6 are not the prime numbers. So there are 3 outcomes out of 7.

Therefore, probability of getting a prime number = $\frac{3}{7}$

(b)

(i) Out of 7 possible outcomes, a number greater than 6 can be obtained in only 1 case.

So there is one outcome out of 7.

Therefore, probability of getting a number greater than 6 = $\frac{1}{7}$

(ii) Out of 7 possible outcomes, a number not greater than 6 can be obtained in only 6 cases.

Numbers not greater than 6 are 1, 2, 3, 4, 5 and 6. So there are 6 outcomes out of 7.

Therefore, probability of not getting a number greater than 6 = $\frac{6}{7}$