CLASS NOTES-ANSWERS
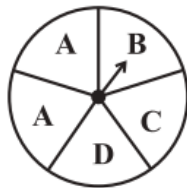
EXERCISE 5.3

1. List the outcomes you can see in these experiments.

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

Answer:

   a. There are four letters A, B, C and D in a spinning wheel. So, there are 4 outcomes.

   b. When two coins are tossed together, there are four possible outcomes HH, HT, TH, TT.

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:

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

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

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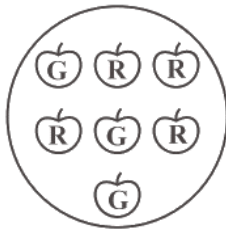
   (b) Outcomes of event of not getting a number greater than 5 are 1, 2, 3, 4 and 5.

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) In a spinning wheel, there are five pointers A, A, B, C, D.

So, there are five outcomes. Pointer stops at D which is 1 outcome.

So, the probability of the pointer stopping on D = $\frac{1}{5}$

(b) There are 4 aces in a deck of 52 playing cards.

So, there are 4 events of getting an ace.

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

(c) Total number of apples = 7

Number of red apples = 4

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

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:

(i) Outcome of getting a number 6 from ten separate slips is 1.

Therefore, probability of getting a number 6 = $\frac{1}{10}$

(ii) Numbers less than 6 are 1, 2, 3, 4 and 5.

So, there are 5 possible outcomes.

Therefore, probability of getting a number less than 6 = $\frac{5}{10} = \frac{1}{2}$

(iii) Number greater than 6 are 7, 8, 9, 10.

So there are 4 possible outcomes.

Therefore, probability of getting a number greater than 6 = $\frac{4}{10} = \frac{2}{5}$

(iv) One-digit numbers are 1, 2, 3, 4, 5, 6, 7, 8, 9 out of ten.

Therefore, probability of getting a 1-digit number = $\frac{9}{10}$

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 sectors = 5

Total number of green sectors = 3

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

Total number of blue sectors = 1

Total number of non-blue sectors = 5 – 1 = 4

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

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

Answer:

When a die is thrown, there are total six outcomes, i.e., 1, 2, 3, 4, 5 and 6.

(i) (a) 2, 3, 5 are prime numbers.

So, there are 3 outcomes out of 6.

Therefore, probability of getting a prime number $= \frac{3}{6} = \frac{1}{2}$

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

Therefore, probability of getting a prime number $= \frac{3}{6} = \frac{1}{2}$

(ii) (a) Only 6 is greater than 5.

So, there is 1 outcome out of 6.

Therefore, probability of getting a number greater than 5 $= \frac{1}{6}$

(b) Numbers not greater than 5 are 1, 2, 3, 4 and 5.

So, there are 5 outcomes out of 6.

Therefore, probability of not getting a number greater than 5 $= \frac{1}{6}$