ICSE Class 8 Maths Selina Solutions Chapter 23: Chapter 23 of Selina Solutions Concise Maths Class 8 Since probability will be covered in greater detail in later courses, it is one of the most significant chapters. The students must comprehend all of the concepts presented in this chapter to achieve this goal. As they work through the textbook problems, students will be able to double-check their answers and identify the areas in which they lack proficiency. Students can use the link provided below to obtain the ICSE Selina Solutions Class 8 Maths Chapter 23 Probability PDF.

A subfield of mathematics called probability studies the likelihood that an event will occur or if a claim is true. It is suggested that students work through the problems every day if they want to do well in the Class 8 exams. Additionally, it will enable them to promptly and clearly answer all of their questions.

ICSE Class 8 Maths Selina Solutions Chapter 23 Overview

ICSE Class 8 Maths Selina Solutions Chapter 23 on Probability provides clear and comprehensive explanations to help students grasp the fundamentals of probability theory. Through structured solutions and step-by-step guidance, students learn how to calculate probabilities of events, understand concepts like favorable outcomes and sample spaces, and apply them to practical scenarios.

The solutions not only aid in exam preparation by aligning with the ICSE syllabus but also strengthen problem-solving skills through a variety of examples and exercises. They serve as a valuable resource for both understanding theoretical concepts and applying them confidently in real-world contexts, ensuring thorough preparation and mastery of probability concepts at the Class 8 level.

ICSE Class 8 Maths Selina Solutions Chapter 23

Here we have provided ICSE Class 8 Maths Selina Solutions Chapter 23 for the ease of students so that they can prepare better for their upcoming exams -

Question 1

A die is thrown, find the probability of getting:

 (i) A prime number

Solution:-

A die has six numbers: 1, 2, 3, 4, 5, 6

No. of possible outcomes =6

We know that

Number of favorable outcomes = a prime number = 1, 3, 5 which are 3 in numbers (Formula)

(ii) A number greater than 4

Solution:-

We know that

No. of favorable outcome = Greater than four i.e. two number 5 and 6

(iii) A number not greater than 4.

Solution:-

We know that

Number of favorable outcome = not greater than 4 or numbers will be 1,2,3,4 which are 4 in numbers

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{4}{6} = \frac{2}{3}$$

Question 2.

A coin is tossed. What is the probability of getting

(i) A tail?

Solution:-

On tossing a coin once,

No. of possible outcome =2

(i) Favorable outcome getting a tail =1

No. of favorable outcome =2

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{1}{2}$$

(ii) a head?

Solution:-

A head

Favorable outcome getting a head =1

No. of possible outcome =2

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{1}{2}$$

Question 3.

A coin is tossed twice. Find the probability of getting:

(i) Exactly one head

Solution:-

Exactly one head

Possible number of favorable outcomes =2 (i.e. TH and HT)

Total number of possible outcomes =4

We know that

$$\therefore P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}} = \frac{2}{4} = \frac{1}{2}$$

(ii) Exactly one tail

Solution:-

Exactly one tail

Possible number of favorable outcomes =2 (i.e. TH and HT)

Total number of possible outcomes =4

We know that

$$P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}} = \frac{2}{4} = \frac{1}{2}$$

(iii) Two tails

Solution:-

Possible number of favorable outcomes =1 (i.e. TT)

Total number of possible outcomes =4

We know that

$$P(E) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}} = \frac{1}{4}$$

(iv) Two heads

Solution:-

Possible number of favorable outcomes =1 (i.e. HH)

Total number of possible outcomes = 4

So we get

P (E) = ¼

Question 4.

A letter is chosen from the word 'PENCIL' what is the probability that the letter chosen is a consonant?

Solution:-

We know that

Total no. of letters in the word 'PENCIL' =6

Total Number of Consonant = 'PNCL' i.e, 4

Here

$$P(E) = \frac{\text{Total No.of consonants}}{\text{Total No.of Letters in the word PENCIL}} = \frac{4}{6} = \frac{2}{3}$$

Question 5.

A bag contains a black ball, a red ball and a green ball, all the balls are identical in shape and size. A ball is drawn from the bag without looking into it. What is the probability that the ball drawn is:

(i) a red ball

Solution:-

Total number of possible outcomes =3

P (E) = 1/3

(ii) Not a red ball

Solution:-

No. of favorable outcomes

P (E) = 2/3

(iii) A white ball.

Solution:-

No. of favorable outcomes =0

P (E) = 0/3 = 0

Question 6.

In a single throw of a die, find the probability of getting a number

(i) Greater than 2

Solution:-

A die has six numbers =1, 2, 3,4,5,6

No. of possible outcomes =6

$P(E) = \frac{4}{6} = \frac{2}{3}$

(ii) less than or equal to 2

Solution:-

Number of favorable outcomes =1, 2

$P(E) = \frac{2}{6} = \frac{1}{3}$

(iii) Not greater than 2.

Solution:-

Number of favorable outcomes =1, 2

$P(E) = \frac{2}{6} = \frac{1}{3}$

Question 7.

A bag contains 3 white, 5 black and 2 red balls, all of the same shape and size.

A ball is drawn from the bag without looking into it, find the probability that the ball drawn is:

(i) a black ball.

(ii) a red ball.

(iii) a white ball.

(iv) not a red ball.

(v) not a black ball.

Solution:-

In a bag, 3 balls are white

2 balls are red

5 balls are black

Total number of balls =3+2+5=10

(i) Number of possible outcomes of one black ball =10 and number of favorable outcome of one black ball =5

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{5}{10} = \frac{1}{2}$$

(ii) Number of possible outcome of one red ball =10 and number of favorable outcome of one red ball =2

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{2}{10} = \frac{1}{5}$$

(iii) Number of possible outcome of one White ball =10 and number of favorable outcome =3

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{3}{10}$$

(iv) Number of possible outcome =10

Number of favorable outcome = 3+5=8

Not a red ball

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{8}{10} = \frac{4}{5}$$

(v) Number of possible outcome =10

Number of favorable outcome not a red ball=3+2=5

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{5}{10} = \frac{1}{2}$$

Question 8

In a single throw of a die, find the probability that the number:

(i) Will be an even number.

(ii) will be an odd number.

(iii) will not be an even number.

Solution:-

A die has six numbers: 1, 2, 3, 4, 5, 6

Number of possible outcome =6

(i) Number of favorable outcome = an even number i.e. 2, 4, 6 which are 3 in numbers

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{3}{6} = \frac{1}{2}$$

(ii)&(iii) Number of favourable outcome = not an even number i.e. odd numbers

: 1,3,5 which are 3 in numbers

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{3}{6} = \frac{1}{2}$$

Question 9.

In a single throw of a die, find the probability of getting:

(i) 8

(ii) a number greater than 8

(iii) a number less than 8

Solution:-

On a die the numbers are 1, 2, 3, 4, 5, 6 i.e, six.

Number of possible outcome =6

(i) Number of favorable outcome =0

(∵8 is not possible)

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{0}{6} = 0$$

(ii) Number greater than 8 will be 0

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{0}{6} = 0$$

(iii) Number less than 8 will be 1,2,3,4, 5, 6

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{6}{6} = 1$$

Question 10.

Which of the following cannot be the probability of an event?

(i) $\frac{2}{7}$

(ii) 3.8

(iii) 37%

(iv) -0.8

(v) 0.8

(vi) $\frac{-2}{5}$

(vii) $\frac{7}{8}$

Solution:-

The probability of an event cannot be

(ii) 3.8 i.e., the probability of an even cannot exceed 1.

(iv) i.e., -0.8

(vi) −2/5, because probability of an even can never be less than 1.

Question 11.

A bag contains six identical black balls. A child withdraws one ball from the bag without looking into it. What is the probability that he takes out:

(i) a white ball,

(ii) a black ball

Solution:-

There are 6 black balls in a bag

Number of possible outcome =6

(i) A white ball

As there is no white ball in the bag

Probability is zero (0) = or P(E)=0

(ii) a black ball

Number of favorable outcome =1

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{1}{6}$$

Question 12.

Three identical coins are tossed together. What is the probability of obtaining?

(i) All heads?

(ii) Exactly two heads?

(iii) Exactly one head?

(iv) No head?

Solution:-

Total outcomes =8

i.e. (H,H,H),(H,H,T),(H,T,H),(T,T,T),(T,H,H),(T,T,H),(H,T,T),(T,H,T)

(i) Favorable outcome= i.e. (H,H,H)

P(of getting all heads) $= \frac{1}{8}$

(ii) Favorable outcomes =3(H, H, T),(H,T, H),(T,H,H)

$P(E) = \frac{3}{8}$

(iii) Favorable outcomes =3(H,T,H),(T,T,H),(H,T,T)

$P(E) = \frac{3}{8}$

(iv) Favorable outcomes =1 i.e. (T,T,T)

$P(E) = \frac{1}{8}$

Question 13.

A book contains 92 pages. A page is chosen at random. What is the probability that the sum of the digits in the page number is 9?

Solution:-

Number of pages of the book =92 which are from 1 to 92

Number of possible outcomes =92

Here

Number of pages whose sum of its page is 9=10

i.e. 9,18,27,36,45,54,63,72,81,90

$P(E) = \frac{10}{92} = \frac{5}{46}$

Question 14.

Two coins are tossed together. What is the probability of getting:

(i) at least one head

(ii) both heads or both tails.

Solution:-

A coins has two faces Head and Tail or H.T

Two coins are tossed

Here

Number of coins =2×2=4 which are HH, HT, TH, TT

(i) At least one head, then Number of outcomes =3

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{3}{4}$$

(ii) When both head or both tails, then

Number of outcomes =2

We know that

$$P(E) = \frac{\text{Number of favourable outcome}}{\text{Number of all possible outcome}} = \frac{2}{4} = \frac{1}{2}$$

Question 15.

From 10 identical cards, numbered 1, 2, 3,…, 10, one card is drawn at random. Find the probability that the number on the card drawn is a multiple of:

(i) 2

(ii) 3

(iii) 2 and 3

(iv) 2 or 3

Solution:-

Total outcomes =10

i.e. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

(i) Favorable outcomes =5 i.e. 2, 4, 6, 8, 10

$$P(E) = \frac{5}{10} = \frac{1}{2}$$

(ii) Favorable outcomes =3 i.e. 3, 6, 9

$$P(E) = \frac{3}{10}$$

(iii) Favorable outcomes =1 i.e. 6

$$P(E) = \frac{1}{10}$$

(iv) Favorable outcomes =7

i.e. 2, 3, 4, 6, 8, 9, 10

$$P(E) = \frac{7}{10}$$

Benefits of ICSE Class 8 Maths Selina Solutions Chapter 23

ICSE Class 8 Maths Selina Solutions Chapter 23 on Probability offer several benefits to students:

Structured Approach: The solutions provided in Selina's textbooks are well-structured, making it easier for students to understand the concepts step-by-step.

Comprehensive Coverage: Each concept related to Probability is covered in detail, ensuring that students grasp both theoretical foundations and practical applications.

Clarity of Concepts: The solutions help in clarifying doubts and improving conceptual clarity through detailed explanations and examples.

Problem-solving Skills: By practicing with these solutions, students develop strong problem-solving skills, which are essential not only for exams but also for future academic challenges.

Exam Preparation: The solutions are designed to align with the ICSE exam pattern and syllabus, thereby aiding students in effective exam preparation.

Self-assessment: Students can use these solutions for self-assessment and gauge their understanding of Probability concepts before examinations.

Application-Oriented Learning: The solutions often include real-life examples and practical applications of Probability, helping students understand its relevance in everyday scenarios.

Revision Assistance: They serve as a useful tool for revision, allowing students to quickly revise key concepts and practice problems.

Confidence Building: By providing clear solutions and explanations, these resources help build confidence among students in tackling Probability-related questions.

Supplementary Practice: Apart from textbook exercises, additional problems and examples provided in the solutions offer supplementary practice to reinforce learning.