NCERT Solutions for Class 10 Maths Chapter 14 Exercise 14.2: Chapter 14 of NCERT Class 10 Maths, "Probability," focuses on understanding the likelihood of events occurring. Exercise 14.2 delves deeper into practical applications, such as finding probabilities of events from given data. Key concepts include experimental probability, favorable outcomes, and total outcomes.

Students learn to solve real-life problems, like tossing coins, rolling dice, or drawing cards, using probability formulas. This exercise enhances logical reasoning and analytical thinking by interpreting data and calculating probabilities. It emphasizes practical problem-solving, preparing students for advanced probability concepts in higher studies. Clear understanding aids in scoring well and applying probability in everyday scenarios.

NCERT Solutions for Class 10 Maths Chapter 14 Exercise 14.2 Overview

Chapter 14 of NCERT Class 10 Maths, "Probability," introduces students to the mathematical study of chance and uncertainty. Exercise 14.2 focuses on solving practical problems by calculating probabilities based on given data, such as dice rolls, coin tosses, or card draws.

This exercise is crucial as it develops logical thinking, decision-making, and data interpretation skills. Understanding probability is essential for real-world applications, including risk assessment, predictions, and statistical analysis. Mastery of this topic not only helps in scoring well in exams but also lays a strong foundation for advanced studies in mathematics, statistics, and various scientific fields.

NCERT Solutions for Class 10 Maths Chapter 14 Exercise 14.2 Probability

1. Two customers, Shyam and Ekta, are visiting a particular shop in the same week (Tuesday to Saturday). Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on

(i) the same day?

(ii) consecutive days?

(iii) different days?

Solution:

Since there are 5 days and both can go to the shop in 5 ways each so,

The total number of possible outcomes = 5×5 = 25

(i) The number of favourable events = 5 (Tue., Tue.), (Wed., Wed.), (Thu., Thu.), (Fri., Fri.), (Sat., Sat.)

So, P (both visiting on the same day) = 5/25 = ⅕

(ii) The number of favourable events = 8 (Tue., Wed.), (Wed., Thu.), (Thu., Fri.), (Fri., Sat.), (Sat., Fri.), (Fri., Thu.), (Thu., Wed.), and (Wed., Tue.)

So, P(both visiting on the consecutive days) = 8/25

(iii) P (both visiting on different days) = 1-P (both visiting on the same day)

So, P (both visiting on different days) = 1-(⅕) = ⅘

2. A die is numbered in such a way that its faces show the numbers 1, 2, 2, 3, 3, 6. It is thrown two times, and the total score in two throws is noted. Complete the following table, which gives a few values of the total score on the two throws:

Number in first throw

Number in second throw	+	1	2	2	3	3	6
	1	2	3	3	4	4	7
	2	3	4	4	5	5	8
	2					5	
	3						
	3			5			9
	6	7	8	8	9	9	12

What is the probability that the total score is

(i) even?

(ii) 6?

(iii) at least 6?

Solution:

The table will be as follows:

+	1	2	2	3	3	6

1	2	3	3	4	4	7
2	3	4	4	5	5	8
2	3	4	4	5	5	8
3	4	5	5	6	6	9
3	4	5	5	6	6	9
6	7	8	8	9	9	12

So, the total number of outcomes = 6×6 = 36

(i) E (Even) = 18

P (Even) = 18/36 = ½

(ii) E (sum is 6) = 4

P (sum is 6) = 4/36 = 1/9

(iii) E (sum is atleast 6) = 15

P (sum is atleast 6) = 15/36 = 5/12

3. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is double that of a red ball, determine the number of blue balls in the bag.

Solution:

It is given that the total number of red balls = 5

Let the total number of blue balls = x

So, the total no. of balls = x+5

P(E) = (Number of favourable outcomes/ Total number of outcomes)

∴ P (drawing a blue ball) = [x/(x+5)] ———(i)

Similarly,

P (drawing a red ball) = [5/(x+5)] ———(i)

From equations (i) and (ii)

x = 10

So, the total number of blue balls = 10

4. A box contains 12 balls, out of which x are black. If one ball is drawn at random from the

box, what is the probability that it will be a black ball?

If 6 more black balls are put in the box, the probability of drawing a black ball is now

double of what it was before. Find x

Solution:

Total number of black balls = x

Total number of balls = 12

P(E) = (Number of favourable outcomes/ Total number of outcomes)

P (getting black balls) = x/12 ——————-(i)

Now, when 6 more black balls are added,

Total balls become = 18

∴ Total number of black balls = x+6

Now, P (getting black balls) = (x+6)/18 ——————-(ii)

It's given that **the probability of drawing a black ball now is double of what it was before.**

(ii) = 2 × (i)

(x+6)/18 = 2 × (x/12)

x + 6 = 3x

2x = 6

∴ x = 3

5. A jar contains 24 marbles, some are green, and others are blue. If a marble is drawn at random from the jar, the probability that it is green is ⅔. Find the number of blue balls in the jar.

Solution:

Total marbles = 24

Let the total green marbles = x

So, the total blue marbles = 24-x

P(getting green marble) = x/24

From the question, x/24 = ⅔

So, the total green marbles = 16

And, the total blue marbles = 24-16 = 8

Benefits of Using NCERT Solutions for Class 10 Maths Chapter 14 Exercise 14.2

Clear Conceptual Understanding: Detailed step-by-step solutions simplify complex problems, helping students grasp key probability concepts effectively.

Accurate Solutions: Verified answers ensure error-free learning, boosting confidence in solving questions.

Exam Preparation: Covers all types of questions likely to appear in exams, ensuring thorough practice.

Time Management: Prepares students to solve problems efficiently under timed conditions.

Foundation Building: Strengthens basic concepts for higher studies in mathematics, statistics, and sciences.

Ease of Access: Organized solutions save time and provide instant clarity on doubts.