# Mathematics

## Practice Test Paper 9

### (Chapter 14: Probability)

### Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

**General Instructions**

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give probabilities in their simplest form. Use of calculators is not allowed.

## SECTION A

(5 questions × 1 mark = 5 marks)

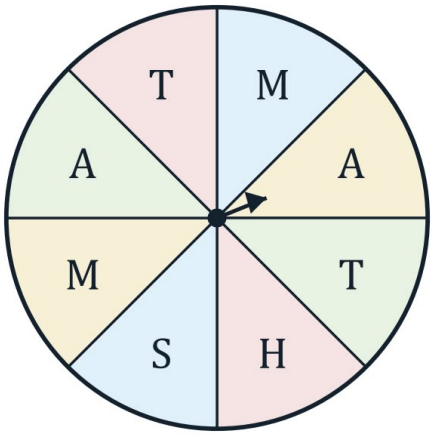
**1.** For three coin tosses, which event is the complement of "at least one head"?

(A) Exactly one head
(B) At least one tail
(C) No heads
(D) Exactly two tails

**2.** One card is chosen from a standard well-shuffled deck. Find the probability that it is not a queen.

(A) $\frac{1}{13}$
(B) $\frac{12}{13}$
(C) $\frac{3}{13}$
(D) $\frac{11}{13}$

**3.** The spinner shown has eight equally likely sectors. Find the probability of M.




(A) $\frac{1}{4}$
(B) $\frac{1}{8}$
(C) $\frac{3}{8}$
(D) $\frac{1}{5}$

**4.** An experiment has exactly three elementary outcomes with probabilities 0.2, 0.3 and p. Find p.

(A) 0.1 (B) 0.6

(C) 0.8 (D) 0.5

**5.** One badge is picked at random from the table. What is the probability that it is gold-coloured?

| Badge colour | Blue | Gold |
|---|---|---|
| Number | 8 | 12 |

(A) $\frac{2}{5}$ (B) $\frac{3}{2}$

(C) $\frac{3}{5}$ (D) $\frac{1}{2}$

## SECTION B

(4 questions × 2 marks = 8 marks)

**6.** One ticket is selected at random from tickets numbered 101 to 150 inclusive. Find the probabilities of (i) a multiple of 10 and (ii) an odd multiple of 5.

**7.** A student says, "Tomorrow it will rain or it will not rain, so the probability of rain is 1/2." Is the reasoning valid? Explain.

**8.** All four queens and the king of clubs are removed from a standard deck. One remaining card is selected at random. Find the probabilities of (i) a king and (ii) a face card.

**9.** A box has 25 bulbs, including 5 defective bulbs. One defective bulb is removed. A bulb is chosen at random from the remaining stock. Find the probability that it is good.

## SECTION C

(3 questions × 3 marks = 9 marks)

**10.** Two fair dice are rolled independently. Find the probabilities that their sum is (i) divisible by 4 and (ii) greater than 9. Show your counting.

**11.** A bag contains 10 white balls and some black balls. A random draw gives white with probability 2/5. Find the number of black balls. Then 5 white balls are added; find the new probability of white.

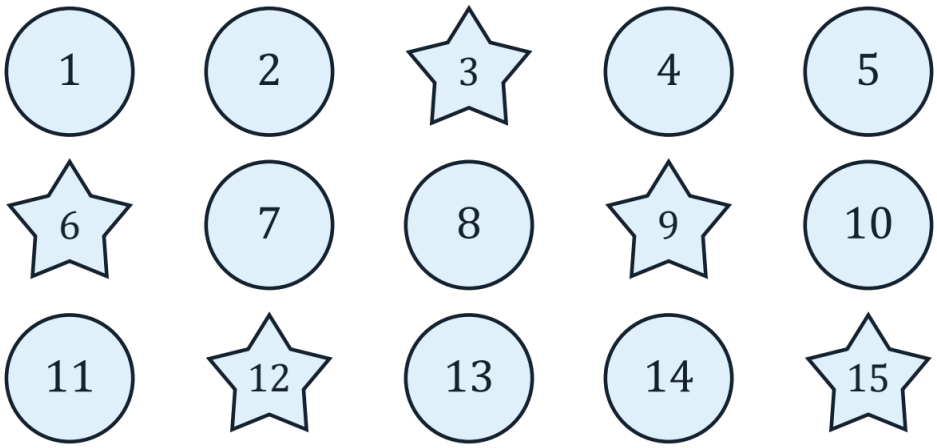
**12.** Each student in the table plays exactly one type of sport. One of all the listed students is chosen at random. Find the probabilities of (i) indoor sport, (ii) outdoor sport in Group A and (iii) membership of Group B.

| Group | Indoor sport | Outdoor sport |
|---|---|---|
| A | 8 | 12 |
| B | 14 | 6 |

## SECTION D

(Application Based Question - 3 marks)

**13.** The fifteen numbered tokens shown are placed in a bag and mixed. Each is equally likely to be drawn. Some are star-shaped and the others are circular. Find the following probabilities.




(i) The token is star-shaped.

(ii) Its number is greater than 10.

(iii) It is star-shaped and its number is greater than 10.