# SmartKalike

CBSE Class 10 · Maths

## Probability

10 most probable questions for Boards 2027

**Q1. 0.5 marks · Very short answer**

Name the equally likely outcomes when a fair die is thrown once.

**Answer**

The equally likely outcomes are 1, 2, 3, 4, 5 and 6; each face of a fair die has the same possibility of showing up.

**Q2. 1 mark · Very short answer**

What assumption about an experiment's outcomes is required when using the classical formula for theoretical probability?

**Answer**

The outcomes of the experiment must be equally likely; for example, each face of a fair die has the same possibility of showing up.

**Q3. 2 marks · Short answer**

State the formula for the theoretical probability of an event when all outcomes are equally likely. Identify what the numerator and denominator represent.

**Answer**

For equally likely outcomes, P(E) = (number of outcomes favourable to E)/(number of all possible outcomes). The numerator counts outcomes favourable to E, and the denominator counts every possible outcome of the experiment.

**Q4. 2.5 marks · Medium answer**

Explain why the probability of an event cannot be less than 0 or greater than 1.

**Answer**

1. The number of outcomes favourable to an event E is non-negative, and the number of all possible outcomes is positive. Their ratio, P(E), therefore cannot be negative.
2. The favourable outcomes are included among all possible outcomes, so their number cannot exceed the total number. Hence $P(E) \leq 1$, and $0 \leq P(E) \leq 1$.

**Q5. 4 marks · Long answer**

A fair coin is tossed twice at random. Briefly explain what is meant by a fair coin and a random toss, then find the probability of getting exactly one head.

**Answer**

Given: A fair coin is tossed twice at random. A fair coin is symmetrical, so neither side has a reason to occur more often. A random toss allows the coin to fall freely without bias or interference.
Possible outcomes: The equally likely outcomes are (H, H), (H, T), (T, H) and (T, T), where H denotes

head and T denotes tail.
Favourable outcomes: Exactly one head occurs in (H, T) and (T, H). Thus, there are two favourable outcomes among four possible outcomes.
Formula: P(E) = number of outcomes favourable to E ÷ number of all possible outcomes.
Substitution: P(exactly one head) = 2 ÷ 4.
Calculation: P(exactly one head) = 1/2.
Answer: The probability of getting exactly one head is 1/2, a dimensionless probability.

**Q6. 5 marks · Long answer**

(5 marks) For a draw from a well-shuffled standard deck, explain why the probability of drawing an ace is 1/13 and the probability of not drawing an ace is 12/13. Describe the four suits, their colours, and which cards are called face cards. Finally, explain the complementary-event rule and illustrate it using the stated situation where one player wins a match with probability 0.62.

Full answer on SmartKalike: https://smartkalike.com/cbse/class-10/maths/probability

**Q7. 6 marks · Very long answer**

Explain what an elementary event is. For an experiment with three elementary outcomes, state how their probabilities are related. Also define an impossible event and a sure event, and give the probability of each.

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**Q8. 1 mark · Multiple choice**

If the probability of an event E is 0.35, what is the probability of its complement, not E?

(A) 0.35
(B) 0.65
(C) 1.35
(D) 0

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**Q9. 2 marks · Short answer**

Explain why outcomes in an experiment involving balls of different colours need not be equally likely. Then state how empirical probability is calculated.

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**Q10. 1 mark · Very short answer**

State one key difference between empirical probability and theoretical probability.

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