

# Tricks To Solve Probability Questions

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The application of probability can be seen in quantitative aptitude as well as in daily life. It is essential to understand the basic concepts of probability to solve the problems efficiently.

This article will cover the foundational concepts of probability and provide techniques to solve problems of varying difficulty levels, helping students preparing for competitive exams such as SBI PO, SBI CLERK, IBPS PO, IBPS CLERK, RRB PO, NICL AO, LIC AAO, SNAP, MAT, SSC CGL, and more.

## Tips and Tricks for Probability

- When solving probability problems, if it's easier to calculate the probability of an event not occurring, subtract that probability from 1 to find the likelihood of the event happening. For example,  $P(E') = 1 - P(E)$ .
- If the term "or" appears in a question, use addition (+) when applying the Fundamental Principle of Counting.
- If the term "and" appears in a question, use multiplication (×) when applying the Fundamental Principle of Counting.
- **Number of Outcomes for Rolling Dice** =  $6^n$ , where n is the number of dice rolled at once:

- For 1 die, the outcomes are  $6^1 = 6$ .

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Got It !

- **Number of Outcomes for Tossing Coins** =  $2^n$ , where  $n$  is the number of coins tossed at once:
  - For 1 coin, the outcomes are  $2^1 = 2$ .
  - For 2 coins, the outcomes are  $2^2 = 4$ .
  - For 3 coins, the outcomes are  $2^3 = 8$ .
- **Number of Outcomes for Drawing a Card** =  $52^n$ , where  $n$  is the number of sets or decks of cards used:
  - For 1 deck of cards, the outcomes are  $52^1 = 52$ .
  - For 2 decks of cards, the outcomes are  $52^2 = 2,704$ .
  - For 3 decks of cards, the outcomes are  $52^3 = 140,608$ .
- The sum of the probability of an event and its complement is **1**, i.e.,  $P(A) + P(A') = 1$ .
- The probability of an impossible event or an event not happening is always 0, i.e.,  $P(\emptyset) = 0$ .
- The probability of a sure event is always 1, i.e.,  $P(A) = 1$ .
- The probability of any event lies between 0 and 1, i.e.,  $0 < P(A) < 1$ .
- The formula for the union of two events A and B:  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ .
- For mutually exclusive events A and B:  $P(A \cup B) = P(A) + P(B)$ .
- Additional Formulas:
  - **Probability of Union of Two Events:**  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ .
  - **Probability of Complement of an Event:**  $P(A') = 1 - P(A)$ .

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- **Use Venn Diagrams:** For problems involving intersections or unions of events (like "either A or B happens"), a Venn diagram can help visualize the problem and ensure that you're not double-counting or overlooking possibilities.
- When a coin is tossed **n** times or **n** coins are tossed once, the probability of each specific outcome is  $1/2^n$ .
- When a die is rolled **n** times or **n** dice are rolled simultaneously, the probability of any specific outcome is  $1/6^n$ .
- If **n** cards are drawn from a deck without replacement, the number of possible outcomes is determined by combinations. The probability of each specific event is given by:
  - $P(E) = 1/C(52, n)$
- If **n** cards are drawn one after the other with replacement, each draw is independent and the number of possible outcomes for each draw remains 52. Therefore, the probability of each simple event is given by:
  - $P(E) = 1/52^n$ .

**Note:** A probability of **1** means an event will definitely **occur**, while **0** means it will definitely **not occur**.

#### Articles related to Probability:

- [Probability in Maths.](#)
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