

Probability

Quick Study Guide

HOW TO USE THIS GUIDE

HIGHLIGHTED TEXT SHOWS IMPORTANT POINTS

- ★ MARKS HIGH-FOCUS TOPICS
- 📝 INDICATES EXAM TIPS
- ⚠️ SHOWS COMMON ERRORS
- 💡 GIVES QUICK TIPS

BASIC CONCEPTS

Mnemonic: "CHANCE GAME"

- C** - Calculate probability
H - Helpful events
A - All outcomes
N - Number system
G - Clear counting
E - Easy formula
G - Get total outcomes
A - All possibilities
M - Measure chance
E - Events count

Remember As:

- CRICKET MATHS**
- * $P(E) = \text{Favorable/Total}$
 - * Like batting average:
 - * $\text{Runs scored/Total balls}$
 - * Always between 0 and 1

Common Errors

- * Wrong counting
- * Total missing
- * Fraction reduction
- * Decimal mistakes

SAMPLE SPACE

Mnemonic: "TOTAL BOSS"

- T** - Total outcomes
O - Organize all
T - Table method
A - All possible
L - List complete
B - Basic counting
O - Outcomes all
S - Simple listing
S - Sure counting

QUICK METHODS:

- LIST KARO**
1. Tree diagram
 2. Table method
- * Like family tree
 - * Like cricket score
 - * Branch by branch
 - * Row $\times$ Column
 - * Count all ends
 - * All possibilities

EXAMPLES:

- * Two coins: {HH, HT, TH, TT}
- * One die: {1, 2, 3, 4, 5, 6}

EVENTS

Mnemonic: "TYPES HERO"

- T** - Types of events
Y - Yes or no
P - Probability find
E - Easy classify
S - Simple events

- H** - How to identify
E - Events classify
R - Right category
O - Observe well

EVENT TYPES:

SURE SHOT:

1. Sure Event ($P = 1$)
 * Like: Getting 1-6 on die
2. Impossible Event ($P = 0$)
 * Like: Getting 7 on die
3. Equally Likely
 * Like: Getting H/T on coin

CARD PROBLEMS

Mnemonic: "PATTI GAME"

- P** - Pack of cards
A - All 52 cards
T - Total suits
T - Types note
I - Ace to King

EXAMPLE

- * $P(\text{Red card}) = 26/52 = 1/2$
- * $P(\text{King}) = 4/52 = 1/13$
- * $P(\text{Ace of hearts}) = 1/52$

QUICK FACTS:

- QUICK COUNT:**
- * Total cards = 52
 - * Each suit = 13
 - * Red cards = 26
 - * Black cards = 26
 - * Face cards = 12
 - * Aces = 4

DICE PROBLEMS

Mnemonic: "DICE BOSS"

- D** - Die numbers
I - Important cases
C - Count proper
E - Easy solve
B - Basic outcomes
O - One by one
S - Simple count
S - Solve smart

REMEMBER AS:

- LUDO GAME:**
- * One die: 6 outcomes
 - * Two dice: 36 outcomes
 - * Sum problems
 - * Product cases
 - * Even/Odd numbers

EXAMPLE:

- * $P(\text{Even number}) = 3/6$
- * $P(\text{Sum } 7) = 6/36$
- * $P(\text{Greater than } 4) = 2/6$

PRACTICAL PROBLEMS

Mnemonic: "DAILY LIFE"

- D** - Daily examples
A - Apply concepts
I - Important cases
L - Life situations
Y - Your surroundings

- L** - Learn usage
I - Important points
F - Find probability
R - Easy examples

REMEMBER AS

- LIFE MEIN**
1. Rain probability
 2. Match winning
 3. Exam questions
 4. Traffic signals
 5. Birth cases



SOLVING STEPS

Mnemonic: "SOLVE KARO"

- S** - See question
O - Organize data
L - List outcomes
V - Very carefully
E - Events count
K - Keep counting
A - All outcomes
R - Right method
O - Organize work

PROBLEM STEPS:

PROBLEM BNAO:

1. Read carefully
2. List outcomes
3. Count favorable
4. Find total
5. Make fraction
6. Simplify answer

QUICK REVISION CHECKLIST

Before Exam:

- ✓ Basic concepts
- ✓ Sample space
- ✓ Types of events
- ✓ Card problems
- ✓ Dice problems
- ✓ Real applications
- ✓ Quick methods

Scoring Tips:

1. Show all outcomes
2. Write clear counting
3. Reduce fractions
4. Draw diagrams
5. Check bounds (0-1)

100%

HIGH FOCUS AREAS

1. Basic Concepts (5 marks)
2. Sample Space (5 marks)
3. Events Types (4 marks)
4. Cards & Dice (4 marks)
5. Applications (4 marks)

QUICK FACTS TABLE

Mnemonic: "YAAD RAKHNA"

Items | Total | Examples

----- | ----- | -----
 Playing Cards | 52 | Red=26, Black=26
 Card Suits | 13 each | Hearts, Spades, etc.
 Face Cards | 12 | Jack, Queen, King
 Single Die | 6 | Numbers 1 to 6
 Two Dice | 36 | All combinations
 Coin Toss | 2 | Head, Tail

IMPORTANT POINTS:

- * $0 \leq P(E) \leq 1$
- * $P(\text{Sure Event}) = 1$
- * $P(\text{Impossible}) = 0$
- * $P(\text{Not } E) = 1 - P(E)$
- * Equally likely = Same chance

GOOD LUCK!

