

Coordinate Geometry

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

DISTANCE FORMULA

Mnemonic: "DOORI GURU"

- D** - Distance formula
O - Organize points
O - Original points
R - Root over square
I - Important formula
G - Get both points
U - Use squares
R - Root nikalo
U - Use proper signs

Remember As:

UBER TRIP

- * Like cab distance:
- * Start point (x_1, y_1)
- * End point (x_2, y_2)
- * Distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Common Errors

- * Sign mistakes
- * Square missing
- * Root forgotten
- * Point order confusion

SECTION FORMULA

Mnemonic: "BICH POINT"

- B** - Between two points
I - In ratio m:n
C - Calculate coords
H - Halfway special
P - Point dividing
O - Organize ratio
I - Internal/External
N - Note formula
T - Take care signs

QUICK FORMULA

RATIO KING:

- * $x = (mx_2 + nx_1)/(m+n)$
- * $y = (my_2 + ny_1)/(m+n)$

SPECIAL CASES:

HALF TIME

- * Mid-point (H)
- * $x = (x_1 + x_2)/2$
- * $y = (y_1 + y_2)/2$
- * Like sharing chocolate!

AREA OF TRIANGLE

Mnemonic: "AREA BOSS"

- A** - Area formula
R - Remember points
E - Easy method
A - Absolute value

- B** - Basic formula
O - Organize points
S - Sign important
S - Solve carefully

QUICK STEPS:

1. Write in cyclic
2. Multiply cross
3. Add/Subtract
4. Half and absolute

REMEMBER AS:

"PIZZA SLICE"

$$\text{Area} = \frac{1}{2} |x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)|$$

COLLINEARITY

Mnemonic: "LINE CHECK"

- C** - Calculate slope
H - How they lie
E - Equal slopes
C - Check area
K - Keep comparing

- L** - Line mein hai?
I - In one line
N - Need three points
E - Either slope/area

TWO METHODS:

SEEDHA KARO

1. Slope Method:
 - * $m_{12} = m_{23} = m_{13}$
2. Area Method:
 - * Area = 0 if collinear
 - * Use area formula.

SLOPE FORMULA

Mnemonic: "DHABAL KING"

- D** - Difference y
H - Horizontal diff
A - Always $y_2 - y_1$
B - By $x_2 - x_1$
A - Apply formula
L - Line ka angle

QUICK FORMULA:

- CLIMB RATIO:**
 * $m = (y_2 - y_1)/(x_2 - x_1)$
 * Like climbing stairs:
 * Rise/Run
 * Up/Forward

EXAMPLES:

- * Points (0,0), (3,6)
- * $m = (6-0)/(3-0) = 2$

PARALLEL & PERPENDICULAR

Mnemonic: "LINE GAME"

- L** - Lines compare
I - Important slopes
N - Note relation
E - Equal for parallel

- G** - Get both slopes
A - Apply rules
M - Multiply check
E - Easy rules

REMEMBER RULES:

SAATH KHADA:

- * Parallel lines:
 - * $m_1 = m_2$
 - * Like railway tracks
- * Perpendicular lines:
 - * $m_1 \times m_2 = -1$
 - * Like plus sign (+)



: APPLICATIONS

Mnemonic: "REAL LIFE"

- R** - Real problems
- E** - Easy to relate
- A** - Apply formulas
- L** - Look around
- L** - Location based
- I** - Important use
- F** - Find distance
- E** - Easy examples

DAILY EXAMPLES:

MAP GAME

1. Finding distances
2. Area calculations
3. Midpoint location
4. Path shortest
5. Position check

QUICK REVISION CHECKLIST

Before Exam:

- ✓ Distance formula
- ✓ Section formula
- ✓ Area of triangle
- ✓ Collinearity
- ✓ Slope concepts
- ✓ Parallel/Perpendicular
- ✓ Applications

Scoring Tips:

1. Draw neat graphs
2. Mark all points
3. Show substitutions
4. Check signs
5. Verify answers

100%

HIGH FOCUS AREAS

1. Distance Formula (5 marks)
2. Section Formula (5 marks)
3. Area Method (4 marks)
4. Collinearity (4 marks)
5. Applications (4 marks)

PROBLEM SOLVING TIPS

Mnemonic: "SOLVE KARO"

- S** - See given points
- O** - Organize data
- L** - List formulas
- V** - Verify signs
- E** - Equation form

FORMULA QUICK LIST:

1. Distance = $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$
2. Midpoint = $((x_1+x_2)/2, (y_1+y_2)/2)$
3. Slope = $(y_2-y_1)/(x_2-x_1)$
4. Area = $1/2 |x_1(y_2-y_3) + x_2(y_3-y_1) + x_3(y_1-y_2)|$

- K** - Keep checking
- A** - All points plot
- R** - Right formula
- O** - Order maintain

GOOD LUCK!

