

CIRCLES

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

TANGENT PROPERTIES

Mnemonic: "TOUCH POINT"

- T** - Touches at one point
O - Only one point
U - Unique point
C - Circle ka friend
H - Hundred percent sure
P - Perpendicular radius
O - Only 90° angle
I - Important property
N - Normal to circle
T - Theorem based

Remember As:

ROTI TOUCH

- * Like roti on tawa:
- * One point touching
- * Right angle at touch
- * Length equal from center
- * Two tangents possible

Common Errors

- * Wrong angle marking
- * Multiple touch points
- * Distance confusion
- * Perpendicular missing

TANGENT LENGTH

Mnemonic: "EQUAL BOSS"

- E** - Equal tangents
Q - Quick proof
U - Use center
A - All same length
L - Length proof
B - Both tangents
O - One point outside
S - Same distance
S - Simple proof

EXAMPLE

YES EXAMPLE

- * From external point
- * Both tangents equal
- * Makes equal triangles
- * Center to point check

REMEMBER AS:
KEY POINTS: BARABAR HAI!

1. Tangents from point
2. Equal in length
3. Same from center
4. PA = PB always

SECANT PROPERTIES

Mnemonic: "KAAT KAAT"

- K** - Kaatne wali line
A - Angle banaye
A - Area relation
T - Two points cut

- K** - Knowledge important
A - All parts related
A - Apply theorem
T - Together solve

REMEMBER AS: LINE GAME

- * $PA \times PB = PC \times PD$
- * Like multiplication:
- * Whole $\times$ Part
- * = Other $\times$ Other

ANGLE THEOREMS

Mnemonic: "ANGLE HERO"

- A** - Angle in semicircle
N - Ninety degree
G - Great theorem
L - Learn well
E - Easy remember

- H** - Half angle
E - Equal arcs
R - Related angles
O - Observe center

KEY THEOREMS:

- CIRCLE WALE**
1. Angle in semicircle = 90°
 2. Cyclic quad angles = 180°
 3. Center angle = $2 \times$ arc angle
 4. Same arc = same angle

CYCLIC QUADRILATERAL

Mnemonic: "CHARO YAAR"

- C** - Cyclic shape
H - Half circle angles
A - Add to 180°
R - Remember sum
O - Opposite angles

- Y** - Yaad karo
A - Angles supplement
A - Add properly
R - Right theorem

PROPERTIES:

OPPO SUM

- * Opposite angles:
- * $\angle A + \angle C = 180^\circ$
- * $\angle B + \angle D = 180^\circ$
- * Like: Dosti ka sum!

CONSTRUCTION

Mnemonic: "DRAW BOSS"

- D** - Draw steps
R - Right sequence
A - Accurate measure
W - Work neatly

- B** - Basic steps
O - One by one
S - Show all steps
S - Scale use

REMEMBER AS STEPS:

STEP GAME:

1. Center mark
2. Radius draw
3. Arc make
4. Join points
5. Check measures



AREA RELATED

Mnemonic: "AREA KING"

- A** - Area formula
- R** - Radius use
- E** - Easy method
- A** - Apply well
- K** - Keep formulas
- I** - Important ones
- N** - Note all cases
- G** - Good practice

KEY FORMULAS:

* Area = πr^2

CIRCLE MATHS:

* Circumference = $2\pi r$

* Arc length = $(\theta/360^\circ) \times 2\pi r$

* Sector area = $(\theta/360^\circ) \times \pi r^2$

QUICK REVISION CHECKLIST

Before Exam:

- ✓ Secant theorems
- ✓ Angle properties
- ✓ Cyclic quad
- ✓ Construction steps
- ✓ Area formulas
- ✓ Applications

Scoring Tips:

1. Draw neat diagrams
2. Mark all angles
3. Show construction
4. Write theorems
5. Check measures

100%

HIGH FOCUS AREAS

1. Tangent Properties (5 marks)
2. Angle Theorems (5 marks)
3. Cyclic Quad (4 marks)
4. Construction (4 marks)
5. Area Related (3 marks)

PROBLEM SOLVING TIPS

Mnemonic: "EXAM HERO"

- S** - See figure first
- O** - Observe given
- L** - List properties
- V** - Verify angles
- E** - Equation make

QUICK THEOREM LIST:

1. Tangent $\perp$ radius
2. Equal tangents
3. Angle in semicircle = 90°
4. Cyclic quad = 180°
5. Center angle = $2 \times$ arc angle

- K** - Keep checking
- A** - All angles mark
- R** - Right theorem
- O** - Order maintain

GOOD LUCK!

