



CLASS 9 MATHEMATICS



CHAPTER 5 – I'M UP AND DOWN, AND ROUND AND ROUND



MCQ WORKSHEET | Ganita Manjari | 2026–27

Name: _____

Class: IX Section: _____

Date: _____



Instructions

- Choose the **one correct answer**.
 - Attempt all questions.
 - **Total: 40 MCQs**
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PART A – CIRCLE BASICS

1. A circle is the set of all points in a plane that are:

- A. At different distances from a fixed point
 - B. Equidistant from a fixed point
 - C. On a straight line
 - D. At equal distances from each other
-

2. The fixed point of a circle is called its:

- A. Radius
 - B. Chord
 - C. Centre
 - D. Diameter
-

3. A line segment joining the centre to any point on the circle is called:

- A. Chord
 - B. Radius
 - C. Diameter
 - D. Arc
-

4. A line segment joining any two points on a circle is called:

- A. Radius
 - B. Diameter
 - C. Chord
 - D. Sector
-

5. Which is the longest chord of a circle?

- A. Radius
 - B. Diameter
 - C. Minor chord
 - D. Major chord
-

6. If the radius of a circle is 7 cm, its diameter is:

- A. 3.5 cm
 - B. 7 cm
 - C. 14 cm
 - D. 49 cm
-

7. A diameter of a circle:

- A. Does not pass through the centre
 - B. Passes through the centre
 - C. Is always shorter than every chord
 - D. Is half the radius
-

8. If the diameter of a circle is 18 cm, its radius is:

- A. 36 cm
 - B. 18 cm
 - C. 9 cm
 - D. 6 cm
-

PART B – SYMMETRY & CIRCLES

9. A circle has:

- A. One line of symmetry
 - B. Two lines of symmetry
 - C. Four lines of symmetry
 - D. Infinitely many lines of symmetry
-

10. Every _____ of a circle is a line of reflection symmetry.

- A. Chord
 - B. Radius
 - C. Diameter
 - D. Arc
-

11. A circle has rotational symmetry through:

- A. Only 90°
 - B. Only 180°
 - C. Only 360°
 - D. Every angle of rotation
-

12. How many circles can pass through two distinct points?

- A. Exactly one
- B. Exactly two

- C. Exactly three
 - D. Infinitely many
-

13. The centres of all circles passing through two fixed points lie on the:

- A. Line joining the two points
 - B. Perpendicular bisector of the segment joining them
 - C. x-axis
 - D. Diameter of the first circle
-

14. Through three non-collinear points, how many circles can be drawn?

- A. None
 - B. One
 - C. Two
 - D. Infinitely many
-

15. The circle passing through the three vertices of a triangle is called its:

- A. Incircle
 - B. Circumcircle
 - C. Semicircle
 - D. Sector
-

PART C – CIRCUMCENTRE & CHORDS

16. The centre of the circumcircle of a triangle is called the:

- A. Incentre
 - B. Orthocentre
 - C. Circumcentre
 - D. Centroid
-

17. The circumcentre is the point of intersection of the:

- A. Medians
 - B. Angle bisectors
 - C. Perpendicular bisectors of the sides
 - D. Altitudes only
-

18. In an acute-angled triangle, the circumcentre lies:

- A. Inside the triangle
 - B. Outside the triangle
 - C. On one side
 - D. At a vertex
-

19. In a right-angled triangle, the circumcentre lies:

- A. At the right-angle vertex
 - B. At the midpoint of the hypotenuse
 - C. Inside the triangle but not on the hypotenuse
 - D. Outside the triangle
-

20. Equal chords of a circle subtend:

- A. Equal angles at the centre
 - B. Unequal angles at the centre
 - C. Right angles at the centre
 - D. Supplementary angles at the centre
-

21. If two chords subtend equal angles at the centre, then the chords are:

- A. Perpendicular
 - B. Equal
 - C. Parallel
 - D. Unequal
-

22. If AB and CD are equal chords of a circle with centre O, then:

- A. $\angle AOB > \angle COD$
 - B. $\angle AOB < \angle COD$
 - C. $\angle AOB = \angle COD$
 - D. $\angle AOB + \angle COD = 90^\circ$
-

PART D – CHORDS & DISTANCE FROM CENTRE

23. The line joining the centre of a circle to the midpoint of a chord is:

- A. Parallel to the chord
 - B. Perpendicular to the chord
 - C. Equal to the chord
 - D. A tangent to the circle
-

24. The perpendicular from the centre of a circle to a chord:

- A. Doubles the chord
 - B. Bisects the chord
 - C. Is equal to the radius
 - D. Bisects the radius
-

25. If OM is perpendicular to chord AB and O is the centre, then:

- A. $AM = AB$
 - B. $MB = AB$
 - C. $AM = MB$
 - D. $OM = AB$
-

26. Equal chords of a circle are:

- A. Equidistant from the centre
 - B. Always diameters
 - C. Always perpendicular
 - D. At unequal distances from the centre
-

27. Chords that are equidistant from the centre of a circle are:

- A. Unequal
 - B. Equal
 - C. Perpendicular
 - D. Parallel to the diameter
-

28. Of two unequal chords of a circle, the longer chord is:

- A. Farther from the centre
 - B. Closer to the centre
 - C. Always a diameter
 - D. At the same distance from the centre
-

29. A circle has radius 13 cm and a chord is 5 cm from the centre. The length of the chord is:

- A. 10 cm
 - B. 12 cm
 - C. 24 cm
 - D. 26 cm
-

30. If a chord has the same length as the diameter, then the chord is:

- A. A radius
 - B. A diameter
 - C. A minor arc
 - D. A tangent
-

PART E – ARCS & ANGLES

31. A connected portion of the circumference of a circle between two points is called:

- A. Chord
 - B. Arc
 - C. Radius
 - D. Diameter
-

32. The smaller arc between two points on a circle is called the:

- A. Major arc
 - B. Minor arc
 - C. Semicircle
 - D. Diameter
-

33. The angle subtended by an arc at the centre is:

- A. Half the angle subtended at the circle
 - B. Equal to the angle subtended at the circle
 - C. Twice the angle subtended at the circle
 - D. Four times the angle subtended at the circle
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34. An arc subtends an angle of 80° at the centre. The angle subtended by the same arc at a point on the circle is:

- A. 20°
 - B. 40°
 - C. 80°
 - D. 160°
-

35. The angle subtended by a diameter at any point on the circle is:

- A. 45°
 - B. 60°
 - C. 90°
 - D. 180°
-

36. If an arc subtends 120° at the centre, its angle at the circumference is:

- A. 30°
 - B. 40°
 - C. 60°
 - D. 240°
-

PART F – CONCYCLIC POINTS & CYCLIC QUADRILATERALS

37. Four or more points lying on the same circle are called:

- A. Collinear points
 - B. Concyclic points
 - C. Parallel points
 - D. Coplanar points
-

38. A quadrilateral whose four vertices lie on the same circle is called a:

- A. Square
 - B. Rectangle
 - C. Cyclic quadrilateral
 - D. Trapezium
-

39. In a cyclic quadrilateral, the sum of two opposite angles is:

- A. 90°
- B. 120°

- C. 180°
 - D. 360°
-

40. In cyclic quadrilateral ABCD, if $\angle A = 72^\circ$, then $\angle C$ is:

- A. 72°
 - B. 90°
 - C. 108°
 - D. 118°
-

BONUS MCQs

41. If two opposite angles of a quadrilateral add up to 180° , then the quadrilateral is:

- A. Always a square
 - B. Always a rectangle
 - C. Cyclic
 - D. Equilateral
-

42. If $\angle AOB = 140^\circ$, where O is the centre, then the angle subtended by the same arc AB at the circumference is:

- A. 35°
 - B. 70°
 - C. 140°
 - D. 280°
-

43. A chord of a circle is 16 cm long. If its perpendicular distance from the centre is 6 cm, the radius of the circle is:

- A. 8 cm
- B. 10 cm

- C. 12 cm
D. 14 cm
-

44. If two chords of a circle are equidistant from the centre and one chord is 12 cm long, the other chord is:

- A. 6 cm
B. 12 cm
C. 18 cm
D. Cannot be determined
-

45. If opposite angles of a cyclic quadrilateral are $(2x + 10)^\circ$ and $(3x - 20)^\circ$, then x is:

- A. 30
B. 35
C. 38
D. 40
-

ANSWER KEY

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	10	C	19	B	28	B	37	B
2	C	11	D	20	A	29	C	38	C
3	B	12	D	21	B	30	B	39	C
4	C	13	B	22	C	31	B	40	C
5	B	14	B	23	B	32	B	41	C
6	C	15	B	24	B	33	C	42	B
7	B	16	C	25	C	34	B	43	B
8	C	17	C	26	A	35	C	44	B



CHAPTER 5 QUICK REVISION

 **Circle** → Points equidistant from a fixed centre.

 **Radius** → Centre to any point on circle.

 **Diameter** → $2 \times \text{radius}$

 **Diameter** → Longest chord.

 **Symmetry** → Every diameter is a line of reflection symmetry.

 **Circumcentre** → Intersection of perpendicular bisectors.

 **Equal chords** → Equal central angles.

 **Perpendicular from centre to chord** → Bisects chord.

 **Equal chords** → Equidistant from centre.

 **Longer chord** → Closer to centre.

 **Arc** → Part of circumference.

 **Central angle** → Twice angle at circumference.

 **Angle in semicircle** → 90°

 **Concyclic points** → Points on the same circle.

 **Cyclic quadrilateral** → Opposite angles sum to 180° .

★ Important Formula

If radius is r and perpendicular distance of chord from centre is d :

$$\text{Chord length} = 2\sqrt{(r^2 - d^2)}$$

SCORE

40–45:  Circle Master!

34–39:  Excellent!

27–33:  Very Good!

20–26:  Good – revise the theorems!

Below 20:  Practise Chapter 5 again!