Mathematics — Ganita Manjari

Chapter 5 Test 8

I'm Up and Down, and Round and Round

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Give exact lengths and reasons for angle calculations.
3. Figures are schematic. Use the stated dimensions and show your working.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A circle has centre O and radius 5 cm. If OP = 4 cm, then P lies:

(A) On the circle
(B) Outside the circle
(C) Inside the circle
(D) At O necessarily

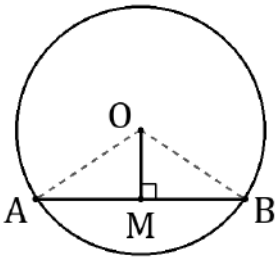
2. Two circles are congruent when their:

(A) Centres coincide
(B) Radii are equal
(C) Positions are the same
(D) Diameters are perpendicular

3. How many lines of reflection symmetry does a circle have?

(A) Two
(B) Four
(C) One
(D) Infinitely many

4. O is the centre and OM ⊥ AB. If AM = (x + 3) cm and MB = (2x − 1) cm, find x.



AM = x + 3

MB = 2x − 1

(A) 4
(B) 7
(C) 14
(D) 8

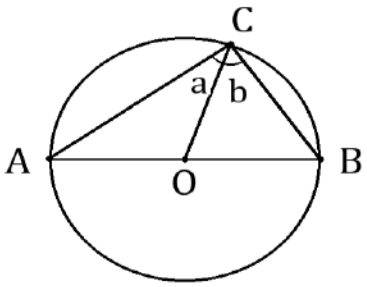
5. The central angles of a minor arc and its major arc are in the ratio 2:7. The minor angle is:

(A) 40°
(B) 70°
(C) 80°
(D) 140°

SECTION B

(4 questions × 2 marks = 8 marks)

6. AB is a diameter. Using the isosceles triangles AOC and BOC, prove that ∠ACB = 90°.



7. Can two different circles pass through the same four distinct points? Explain, and give a case with no circle.

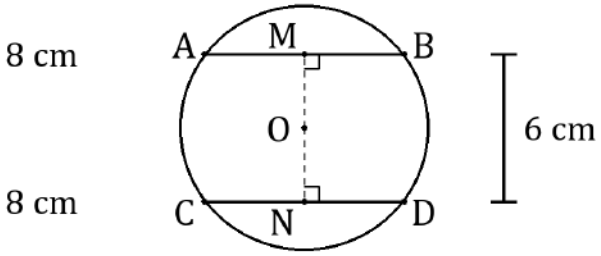
8. Refute: "Every line through a circle's centre bisects every chord." Give a counterexample and the correct statement.

9. Can cyclic ABCD satisfy both ∠A = 2∠B and ∠C = 2∠D? Justify.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Two equal parallel chords are 8 cm long and 6 cm apart. Locate the centre between them and find the radius.



11. AB and CD are two distinct diameters of a circle with centre O. Prove that AC = BD and AD = BC.

12. Complete a rectangle to prove that a right triangle's hypotenuse midpoint is equidistant from its three vertices.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A and B are 20 m apart. Describe all positions C on one specified side of AB for which ∠ACB = 90°. If M is the midpoint of AB, can MC = 8 m?