Mathematics — Ganita Manjari

Chapter 6 Test 4

Measuring Space: Perimeter and Area

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. Leave π and square roots exact unless directed otherwise.
3. Figures are schematic. Use the stated dimensions and show your working.

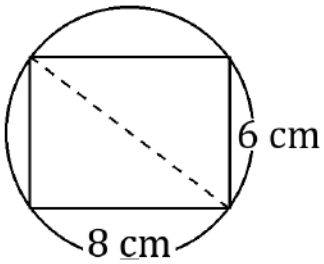
SECTION A

(5 questions × 1 mark = 5 marks)

1. The circle touching all three sides of a triangle internally is its:

(A) Circumcircle
(B) Incircle
(C) Semicircle
(D) Excircle

2. The rectangle has sides 6 cm and 8 cm. Find the radius of its circumcircle.



(A) 3 cm
(B) 4 cm
(C) 5 cm
(D) 10 cm

3. A median always divides a triangle into two triangles with:

(A) Equal areas
(B) Equal perimeters
(C) Equal corresponding sides
(D) Equal angles

4. The full perimeter of a sector with radius r and arc length l is:

(A) $l + r$
(B) $2l + r$
(C) πr^2
(D) $l + 2r$

5. Which three lengths cannot form a non-degenerate triangle?

(A) 4, 5, 6
(B) 5, 5, 8
(C) 2, 3, 6
(D) 7, 8, 9

SECTION B

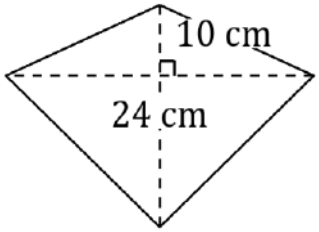
(4 questions × 2 marks = 8 marks)

6. A triangle has perimeter 30 cm and inradius 2 cm. Find its area.

7. A triangle has sides 5, 12 and 13 cm and area 30 cm^2. Find its circumradius.

8. Show that $P^2/A = 16$ for every square, where P is perimeter and A is area.

9. The kite has perpendicular diagonals of lengths 10 cm and 24 cm. Find its area and state why half the diagonal product applies.



SECTION C

(3 questions × 3 marks = 9 marks)

10. An isosceles triangle has perimeter 40 cm and equal sides 15 cm. Find its exact area.

11. Prove that a sector of radius r and arc length l has area $A = rl/2$.

12. A circle and a square both have perimeter 44 cm. Compare their areas using $\pi \approx 22/7$. Which encloses more area and by how much?

SECTION D

(1 application question × 3 marks = 3 marks)

13. Four inward semicircles have the sides of a 2-unit square as diameters. Find the perimeter and area of the shaded four-petal flower.

