Mathematics

Practice Test Paper 1

(Ganita Prakash Part 2 | Chapter 4: Exploring Some Geometric Themes)

Class VIII | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary working in Sections B, C and D.
4. Study the diagrams carefully before answering the related questions.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Which feature is shared by a fern and a fractal pattern?

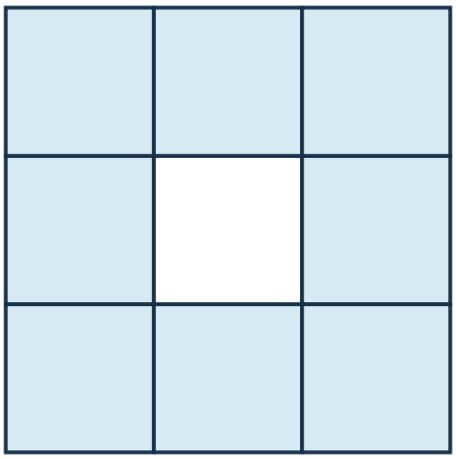
(A) Similar forms appear at smaller scales

(B) Every part is a circle

(C) All parts have the same size

(D) The pattern has no repeated form

2. The centre square has been removed from a 3 × 3 square grid. How many small squares remain?



(A) 8 (B) 9

(C) 6 (D) 7

3. A prism has hexagonal bases. How many edges does it have?

(A) 18 (B) 14

(C) 20 (D) 12

4. How many different nets does a cube have, when rotations and mirror images are treated as the same net?

(A) 2 (B) 8

(C) 11 (D) 6

5. A line segment is perpendicular to the plane on which it is projected. Its orthogonal projection is:

(A) A circle (B) A longer segment

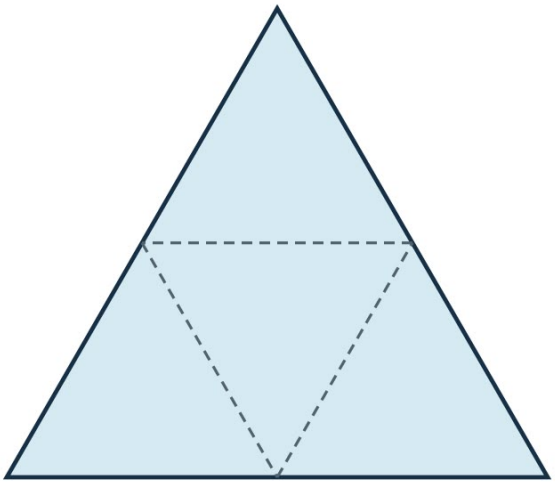
(C) A point (D) A segment of the same length

SECTION B

(4 questions × 2 marks = 8 marks)

6. In a Sierpiński triangle, Step 0 is one filled triangle. At every step, each remaining triangle is replaced by three smaller filled triangles. Find the number left at Step 3 and the number of new holes made during Step 3.

7. The net below consists of four equal equilateral triangles. Name the solid it forms and state how many faces meet at each vertex.



8. A 9 cm segment has an orthogonal projection on a plane. Ravi says that the projection is 12 cm long. Is this possible? Explain, and state when its projected length would be 9 cm.

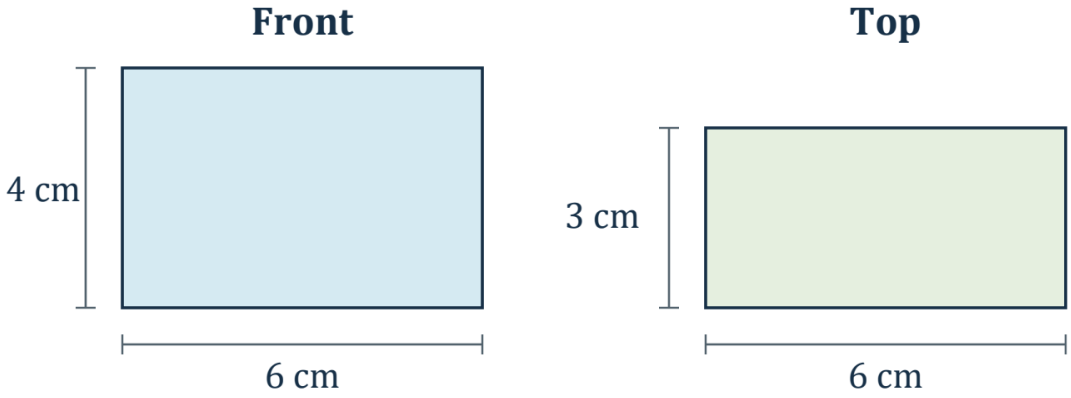
9. The midpoints of the four sides of a square of side 6 cm are joined. Its four corner triangles are cut off. Name the shape left and find its area.

SECTION C

(3 questions × 3 marks = 9 marks)

10. A prism has 9 faces. Find the number of sides of either base, its number of edges and its number of vertices.

11. Two orthogonal views of a cuboid are shown. Find its length, depth and height. Give the dimensions of its side view and explain why the front view alone cannot give its depth.



12. A square of area 81 cm^2 is used for a Sierpiński carpet. Each step removes the centre ninth of every remaining square. Find the area left after two steps and the total area removed.

SECTION D

(Application Based Question - 3 marks)

13. A closed cardboard cuboid is 5 cm long, 3 cm wide and 2 cm high. Its net has no overlaps or gluing flaps.

(i) State the dimensions of the two largest faces.

(ii) Find the total area of the two smallest faces.

(iii) Find the area of cardboard in the complete net.