Mathematics

Practice Test Paper 2

(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. How many edges meet at a vertex of a regular tetrahedron?

(A) 4 (B) 3
(C) 6 (D) 2

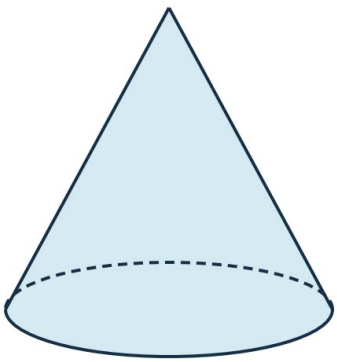
2. In one step of the Koch construction, each straight segment is replaced by how many shorter segments?

(A) 2 (B) 5
(C) 3 (D) 4

3. In a cardboard net, small gluing flaps are:

(A) Parts used to join the faces (B) Extra edges of the solid
(C) Always equal to the base (D) Extra faces of the solid

4. The solid below stands on its circular base. Which pair gives its top-view outline and its front-view outline?



(A) Square and triangle (B) Circle and triangle
(C) Triangle and circle (D) Circle and square

5. Two parallel lines have distinct line projections on a plane. The projected lines are:

(A) Always perpendicular (B) Always curved

(C) Never parallel (D) Parallel

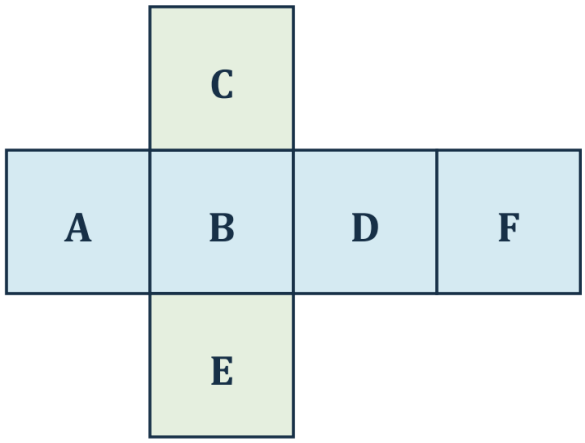
SECTION B

(4 questions × 2 marks = 8 marks)

6. At Step 0, a Sierpiński carpet has no holes. The next steps add 1, then 8, then 64 holes. A student says that Step 3 has 64 holes in all. Correct the answer with a reason.

7. Why can a sphere not be wrapped perfectly with one flat sheet without stretching, cutting, wrinkles or overlap? Would drawing a circle on the sheet make it a net of the sphere?

8. Fold the labelled net mentally. Which face lies opposite C, and which face lies opposite A?



9. Four unit cubes form a straight row. Another four form a 2 × 2 square layer. Can rotating the first solid turn it into the second? Give a reason.

SECTION C

(3 questions × 3 marks = 9 marks)

10. A Sierpiński triangle starts with area 256 cm^2. Each step keeps three of the four equal parts of every remaining triangle. Find the area left after four steps and the number of smallest triangles then left.

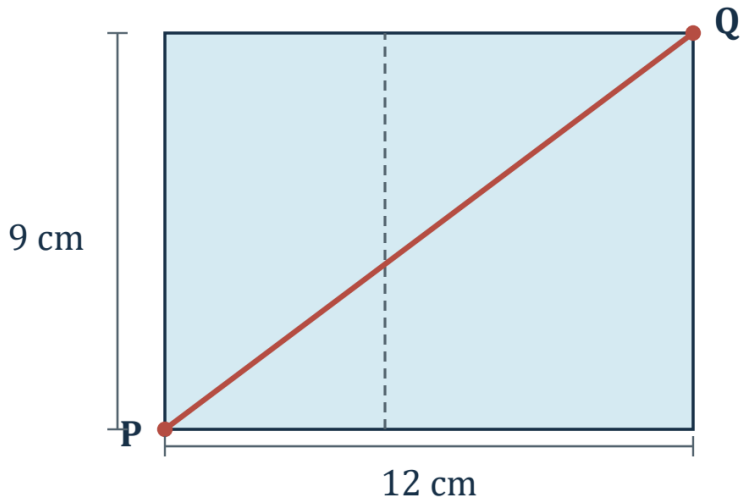
11. A straight line joining two marked points on one net passes outside that net. Explain why it cannot be used as a surface path. How would you look for the shortest surface path instead?

12. An octagonal pyramid is made from one octagonal base and triangular side faces. Find its numbers of faces, edges and vertices, showing how you count them.

SECTION D

(Application Based Question - 3 marks)

13. Two adjacent faces of a box have been unfolded as shown. An ant must travel from P to Q while staying on these two faces. The full rectangle is 12 cm wide and 9 cm high.



(i) Find the length of the straight path PQ.

(ii) Find the length of the route along the bottom and right sides.

(iii) Which of these routes is shorter, and by how much?