Mathematics

Practice Test Paper 6

(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 is an example of self-similarity in architecture?

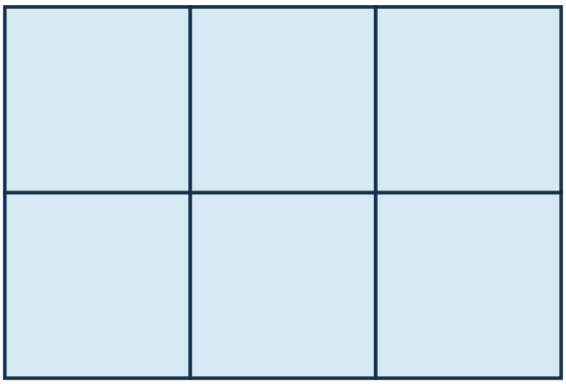
(A) Smaller tower-like forms repeating the main tower's shape

(B) A plain wall with one door

(C) Six unrelated shapes in a row

(D) All rooms painted blue

2. Six squares are arranged in the 2 × 3 rectangle below. Can this arrangement fold into a cube along the grid lines without overlap?



(A) Yes, every six-square arrangement works

(B) No, a cube needs eight squares

(C) Yes, because its area is correct

(D) No, some faces overlap when folded

3. A pyramid with a triangular base is also called a:

(A) Cuboid (B) Cylinder

(C) Hexagonal prism (D) Tetrahedron

4. On an isometric grid, the three families of lines are used to show:

(A) Only the height
(B) Only the visible faces
(C) Only right angles on paper
(D) Length, depth and height

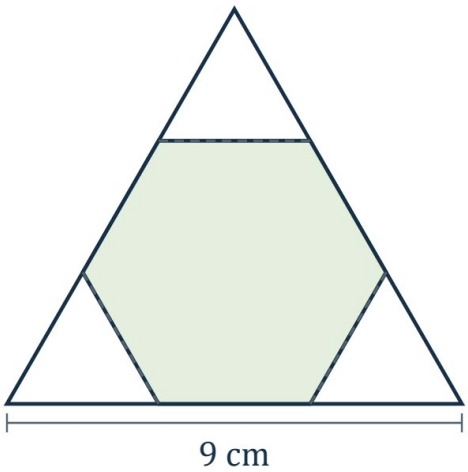
5. A cone is opened by cutting from its tip to its circular base along a straight generator. Its curved surface opens into a:

(A) Square
(B) Rectangle
(C) Circle
(D) Circular sector

SECTION B

(4 questions × 2 marks = 8 marks)

6. The corners of an equilateral triangle are trimmed at its trisection points as shown. Find an interior angle of the shaded hexagon and explain why it is larger than an angle of the original triangle.



7. A line segment is 10 cm long. Give two different possible orthogonal projection lengths and describe how the segment could be placed to obtain each.

8. A Sierpiński triangle contains 27 smallest filled triangles at one step. How many were present at the previous step, and how many will be present at the next step?

9. Why are two polygons of the same shape but different sizes not suitable as the two bases of a prism?

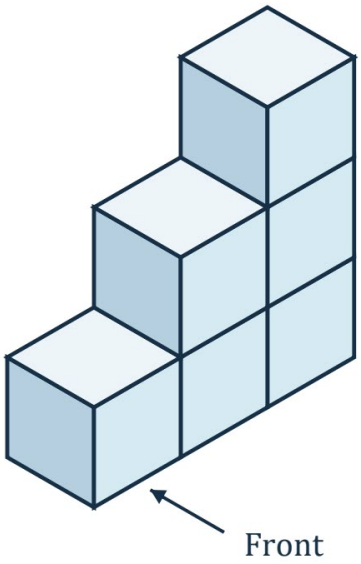
SECTION C

(3 questions × 3 marks = 9 marks)

10. A Koch snowflake begins with an equilateral triangle of side 9 cm. Find its perimeter at Steps 0, 1 and 2, explaining the multiplier used at each step.

11. Two square pyramids have the same square base size but different heights. Compare their top-view outlines and their front-view outlines when both stand upright on their bases.

12. A staircase is built from full columns of unit cubes as shown. It is one cube deep, with column heights 1, 2 and 3. Find the number of cubes, the number of unit squares in its top view and the height of its side-view outline.



SECTION D

(Application Based Question - 3 marks)

13. A packaging team has two models: a pentagonal prism and a pentagonal pyramid. Both use congruent regular pentagons for their bases.

(i) Which model needs two pentagonal pieces in its net?

(ii) How many triangular side faces does the pyramid have?

(iii) How many more vertices does the prism have than the pyramid?