Mathematics

Practice Test Paper 3

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

Class VIII | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

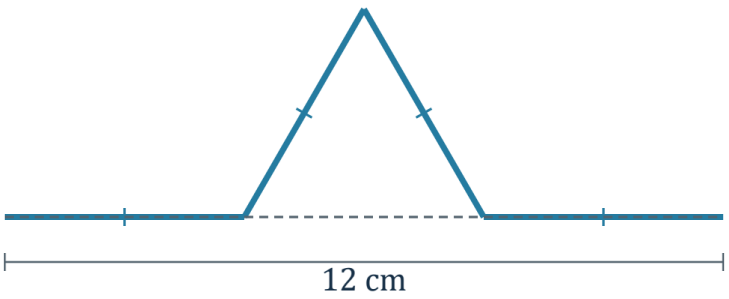
General Instructions

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. A 12 cm segment is changed into the bent line below by one Koch step. What is the total length of the new line?



(A) 18 cm
(B) 24 cm
(C) 16 cm
(D) 12 cm

2. A cuboid rests on one face and is viewed straight from the front. Its outline is:

(A) Always a triangle
(B) A pentagon
(C) A rectangle
(D) A circle

3. A prism has 27 edges. How many sides does one base have?

(A) 9
(B) 7
(C) 10
(D) 8

4. How many different nets can be made for a regular tetrahedron, counting rotated and reflected copies only once?

(A) 4
(B) 1
(C) 8
(D) 2

5. Which lighting condition best produces an orthogonal projection as a shadow?

(A) A lamp touching the object

(B) A nearby torch shining at an angle

(C) Parallel light rays perpendicular to the screen

(D) Light spreading out from a candle

SECTION B

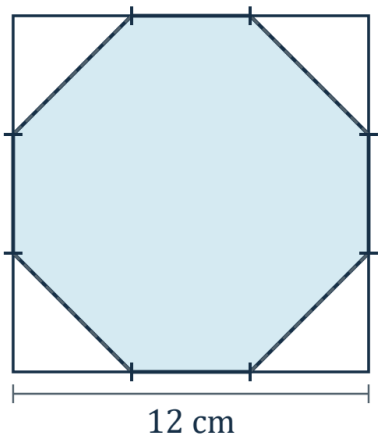
(4 questions × 2 marks = 8 marks)

6. Step 0 of a Koch snowflake is an equilateral triangle. The number of segments is multiplied by 4 at each step. Find the number at Step 3 and the number added in going from Step 2 to Step 3.

7. Each side of an equilateral triangle is 18 cm long. Mark the trisection points and cut off the three corners by joining the nearer marks. Name the shape left and find its perimeter.

8. A parallelepiped has parallelograms as faces. Explain why every cuboid is a parallelepiped but a parallelepiped need not be a cuboid.

9. The corners of the 12 cm square are removed along the dashed lines. Each cut joins two trisection points beside a corner. Is the octagon left regular? Compare a straight-side segment with a cut edge.



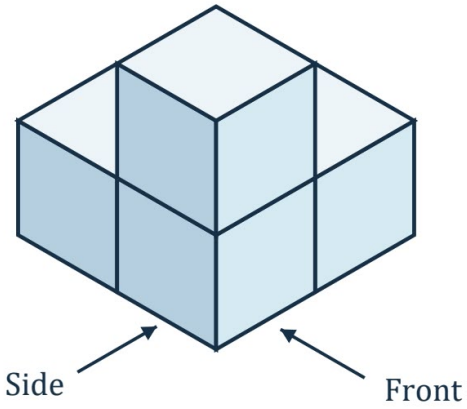
SECTION C

(3 questions × 3 marks = 9 marks)

10. A 13 cm segment AB has A on a horizontal plane. B is 5 cm above the plane, and O is the foot directly below B. Find the length of the orthogonal projection AO and compare it with AB.

11. For a Sierpiński carpet, let R_n be the number of smallest squares left after Step n, with $R_0 = 1$. Write a rule linking consecutive steps. Use it to find R_3, and explain why R_3 does not count all the holes.

12. The solid below is built from four unit cubes, with one cube raised above a corner cube. Count the squares in its top, front and side views. Do these equal counts mean that it is one larger cube? Explain.



SECTION D

(Application Based Question - 3 marks)

13. A designer makes a tent model in the shape of a triangular prism. Both triangular ends are congruent, and the three faces joining them are rectangles.

(i) How many faces does the model have?

(ii) How many vertices does it have?

(iii) How many edges join corresponding vertices of the triangular ends?