Mathematics

Practice Test Paper 8

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

Class VIII | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

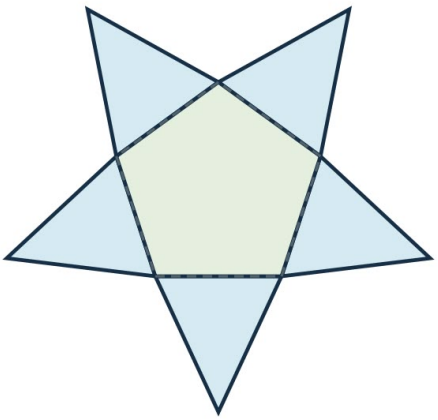
General Instructions

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. The net below has one regular pentagon and five triangles. Which solid will it form?



(A) Pentagonal prism
(B) Triangular prism
(C) Hexagonal pyramid
(D) Pentagonal pyramid

2. A cylinder stands upright on a circular base. Its side-view outline is a:

(A) Triangle
(B) Pentagon
(C) Rectangle
(D) Circle only

3. Which set can describe the numbers of faces, edges and vertices of a triangular prism, in that order?

(A) 6, 12, 8
(B) 5, 8, 5
(C) 5, 9, 6
(D) 4, 6, 4

4. In a Sierpiński triangle, the number of smallest filled triangles at Step n is:

(A) 2^n
(B) 3^n
(C) $n + 3$
(D) 4^n

5. When a net is folded into a solid without stretching, a line drawn on a face:

(A) Always becomes a curve (B) Always becomes longer

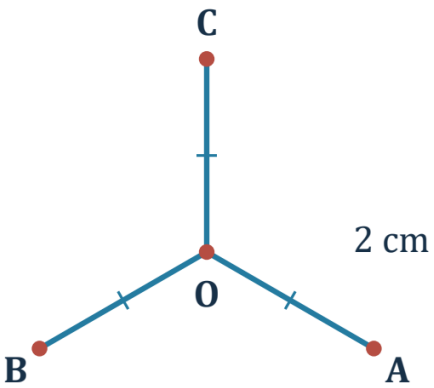
(C) Must disappear (D) Keeps its length

SECTION B

(4 questions × 2 marks = 8 marks)

6. A cube of side 2 cm is enlarged to a cube of side 5 cm. Does the number of faces, edges or vertices change? Give all three counts.

7. OA, OB and OC represent three edges of a cube in an isometric drawing. OA is drawn 2 cm long. How long should OB and OC be drawn? Why are their angles on the page not the actual angles between the cube's edges?



8. A carpenter is given only a top view of a rectangular box. Which dimension is missing, and what extra view would supply it?

9. A Sierpiński carpet has 4096 smallest squares at one step. Find the step number, taking one square as Step 0. Show the sequence you use.

SECTION C

(3 questions × 3 marks = 9 marks)

10. A cone and a cylinder stand upright on equal circular bases. Both are 10 cm high. Compare their top-view outlines and their front-view outlines. What information distinguishes them?

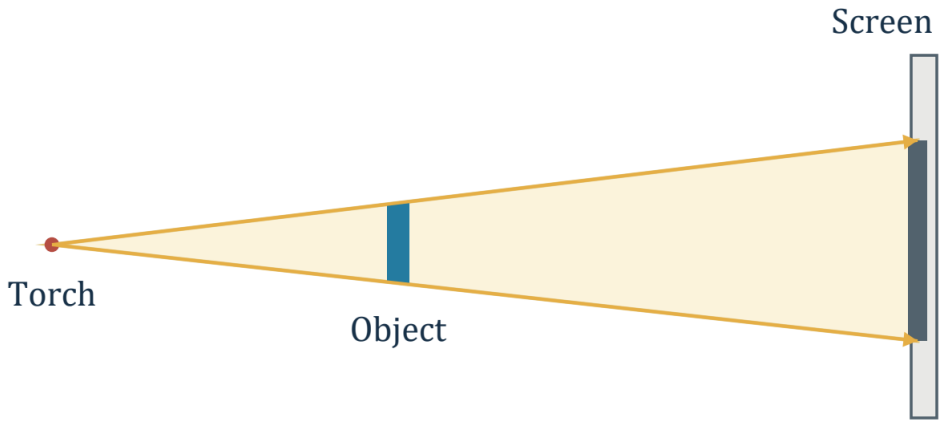
11. A Sierpiński carpet is cut from a square of side 27 cm. Find the side of a smallest remaining square after two steps, the area of one such square and the number of these squares.

12. A toy is a 2 × 2 × 2 block of unit cubes with its top-front-right cube removed. How many cubes remain? Does its top-view outline change? Explain why a top view alone may miss the removed cube.

SECTION D

(Application Based Question - 3 marks)

13. A small object stands between a nearby torch and a screen, as shown. The torch rays spread out.



(i) Is the enlarged shadow necessarily an orthogonal projection?

(ii) What feature of these rays causes the size change?

(iii) How should the rays meet the screen to give an orthogonal projection?