Mathematics

Practice Test Paper 10

(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 shape provides a triangular side face of a pyramid?

(A) Two parallel base faces

(B) A circle rolled into a tube

(C) One base edge joined to the apex

(D) The polygonal base joined to every point in space

2. A Koch snowflake starts with 3 segments. Which expression gives the number after n steps?

(A) 4×3^n

(B) 3×4^n

(C) 3×3^n

(D) $3 + n$

3. In a Sierpiński carpet, which statement about the holes after Step 2 is true?

(A) Every hole is a triangle

(B) All nine holes have the same area

(C) There are only eight holes in all

(D) There is one larger hole and eight smaller holes

4. Which statement about three views of a solid is correct?

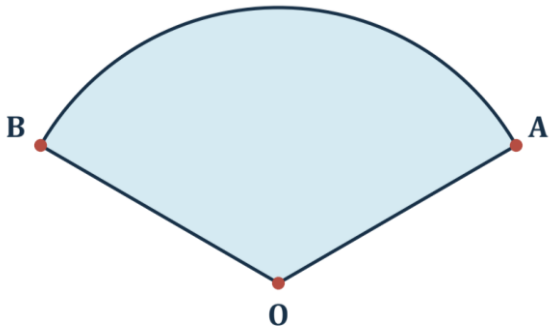
(A) Only the top view can show depth

(B) They all show exactly the same dimensions

(C) Front, top and side views show the solid from different perpendicular directions

(D) A side view is always a triangle

5. A right circular cone's curved surface has been opened into the sector shown. Which length on the cone is represented by OA?

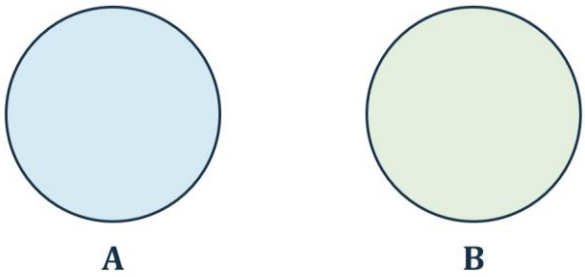


(A) Base diameter
(B) Slant height
(C) Base circumference
(D) Vertical height

SECTION B

(4 questions × 2 marks = 8 marks)

6. Object A is a sphere and object B is an upright cylinder. Both have the same diameter. Their top-view outlines are shown. Can these views distinguish the objects? Describe the side-view outline of each.



7. A cube net is copied twice as large in every length. What happens to the edge length of the folded cube and to the area of each face?

8. For a Sierpiński carpet, H_n is the total number of holes and R_n is the number of smallest squares after Step n. Explain the rule $H_{n+1} = H_n + R_n$.

9. A cylinder is opened into a rectangle and two circles. If the rectangle's wrapping edge is shorter than the circumference of a circle, why will these pieces fail to close correctly?

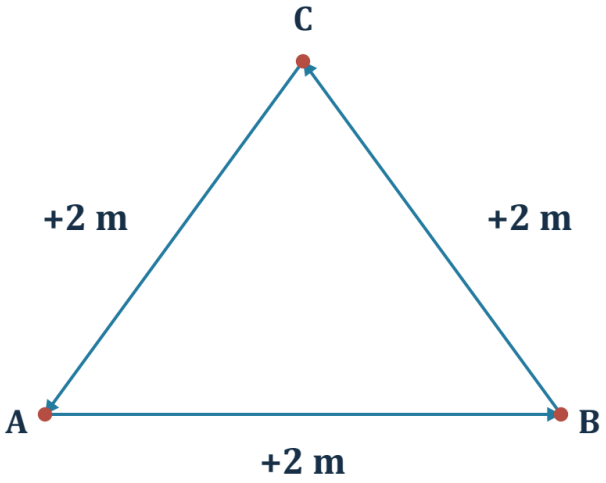
SECTION C

(3 questions × 3 marks = 9 marks)

10. A regular tetrahedron has faces of area 9 cm^2 each. Find the area of its net. Explain why neither choosing a different tetrahedron net nor turning a face changes this total.

11. A square pyramid and a cube both have square top-view outlines. Explain why this does not make them the same solid. Compare their front-view outlines and their numbers of faces.

12. The arrows below are claimed to represent a closed walking route. Each arrow rises 2 m, yet the route returns to A. Show the contradiction, and explain how such a drawing can look believable on a flat page.



SECTION D

(Application Based Question - 3 marks)

13. A student builds a right prism whose base is a regular 12-sided polygon. All side faces are rectangles.

(i) How many rectangular side faces are there?

(ii) How many vertices are on the two bases together?

(iii) How many edges does the solid have in all?