Mathematics

Practice Test Paper 5

(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 cube is balanced on a corner and viewed along a body diagonal. Its outer outline in this isometric view is a:

(A) Regular hexagon

(B) Circle

(C) Triangle

(D) Regular pentagon

2. Which solid has two congruent polygonal bases and parallelograms joining corresponding sides?

(A) A cone

(B) A pyramid

(C) A sphere

(D) A prism

3. The four corners of a square are cut off by joining adjacent side midpoints. How many sides does the shape left have?

(A) 6 (B) 3

(C) 8 (D) 4

4. A regular tetrahedron is made from four paper faces. Each face is a:

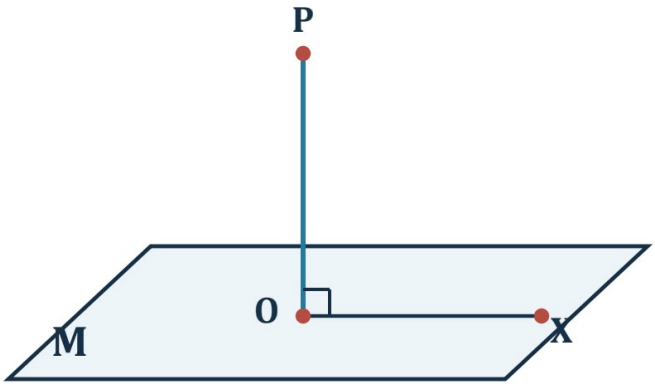
(A) Square

(B) Rectangle

(C) Equilateral triangle

(D) Regular hexagon

5. O is the orthogonal projection of P on plane M. X is another point of M. What is the angle POX?



(A) 60°
(B) 90°
(C) 45°
(D) 0°

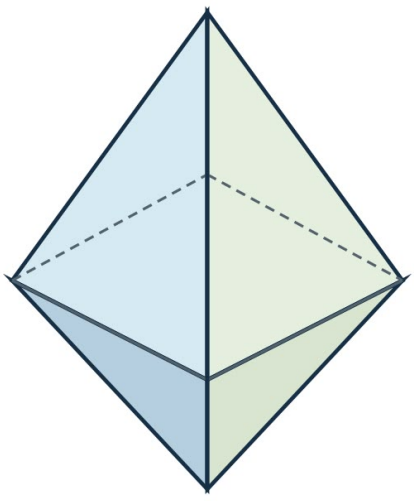
SECTION B

(4 questions × 2 marks = 8 marks)

6. At a certain step of a Koch snowflake, there are 48 segments, each 1 cm long. Find the number and length of the segments at the next step.

7. A rectangular sheet is held at right angles to a viewing plane, with its edge facing the viewer. What happens to its orthogonal projection? Explain why its projected area differs from its actual area.

8. Two identical square pyramids are joined along their square bases as shown. Count the outside faces and vertices of the new solid. Do the two square bases remain outside faces?



9. A square is divided into nine equal squares, and its centre square is removed. At the next step, the same operation is performed on each of the eight squares left. Why is removing just the centre of the whole design again not the next step?

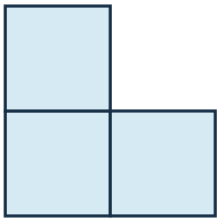
SECTION C

(3 questions × 3 marks = 9 marks)

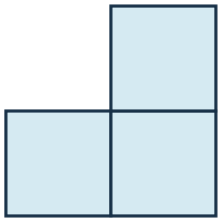
10. A regular hexagonal prism is opened along edges to make a net. State the types and numbers of pieces needed. Explain why using only six rectangles would leave the solid open.

11. A solid is made of full vertical columns of unit cubes on a 2 × 2 base. Its front and right-side views are shown. What is the greatest possible number of cubes? Give the four column heights that achieve it, with the front row written first.

Front view



Right-side view



Front

Back

12. Two different nets of the same cuboid have the same six faces arranged differently. Must they use the same area of paper when flaps are excluded? Explain. Could the size of the smallest enclosing rectangle differ?

SECTION D

(Application Based Question - 3 marks)

13. A square pyramid has a base side of 4 cm. Each of its four triangular side faces has height 3 cm, measured within that face from the base edge to the apex.

(i) Find the area of the square piece in its net.

(ii) Find the area of one triangular piece.

(iii) Find the total area of all five pieces.