

CLASS 8

MATHS

REVISION NOTES

Revision Notes for Class 8 Maths Chapter 11: Exploring Some Geometric Themes

Condensed revision notes for Class 8 Maths Chapter 11: Exploring Some Geometric Themes - Ganita Prakash.

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Fractal: a shape built by repeating the same rule at smaller and smaller scales.

Sierpinski Triangle (Gasket): repeatedly divide a triangle into 4 and remove the centre. Holes at step $n = (3^n - 1)/2$. Area remaining after step $n = (3/4)^n \times \text{original area}$.

Sierpinski Carpet: same idea on a square, removing the central $1/9$ each step. Area remaining after step $n = (8/9)^n \times \text{original area}$.

Koch Snowflake: replace the middle third of every edge with two sides of a smaller triangle. Sides at step $n = 3 \times 4^n$. Perimeter after step $n = 3 \times (4/3)^n$ (grows without bound, even though the enclosed area stays finite).

Net: a flat (2D) arrangement of shapes that folds up into a 3D solid.

Cube: has exactly **11** distinct nets.

Prism (n-sided base): Faces = $n+2$, Edges = $3n$, Vertices = $2n$.

Pyramid (n-sided base): Faces = $n+1$, Edges = $2n$, Vertices = $n+1$.

Euler's formula (any convex polyhedron): Vertices – Edges + Faces = 2.

Cylinder net: a rectangle (length = $2\pi r$, height = h) plus two circles of radius r .

Cone net: a circular sector (arc length = $2\pi r$) plus one circle of radius r .

Views/projections: the front view, top view and side view of a solid can look completely different from each other; a cube's shadow/outline can be a square, rectangle, parallelogram, rhombus, or (viewed along a body diagonal) a regular hexagon.

Optical illusions (Penrose staircase, impossible triangle): these 2D pictures cannot exist as single consistent 3D objects; they work because our brain assumes one 3D interpretation, checks local corners rather than the whole shape, and prefers smooth/continuous connections.

More on this chapter: [Solutions](#) | [Extra Questions](#) | [Class 8 Maths Book](#) | [Formulas Handbook](#)