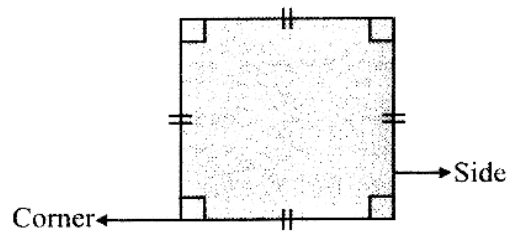


# Solid Shapes

## FUNDAMENTALS

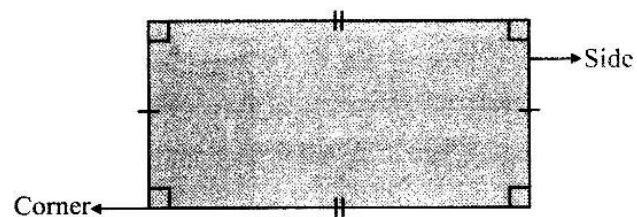
- Description of Some basic shapes:

### (a) Square



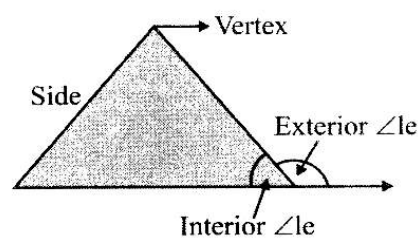
It has four sides and four comers. All its sides are of the same length.

### (b) Rectangle.



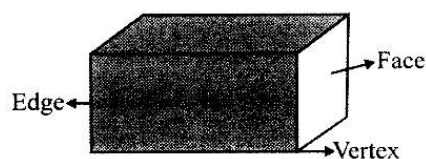
It has four sides and four comers. The opposite sides of a rectangle are parallel and of the same length. Every interior angle is a right  $\angle$ le.

### (c) Triangle



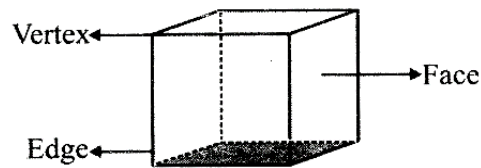
It has three sides and three vertices.

### (d) Cuboid



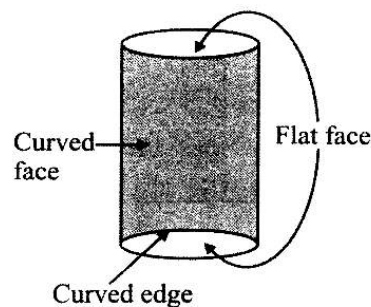
It has 6 flat faces, 12 straight edges and 8 vertices.

**(e) Cube**



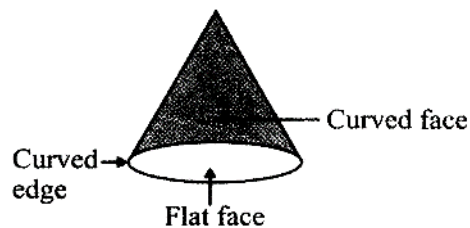
It has 6 flat faces, 8 vertices and 12 straight edges.

**(f) Cylinder**



It has 3 faces → 1 curved face and 2 flat faces.

**(g) Cone**

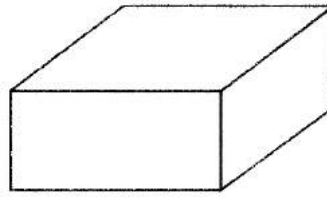


It has 2 faces → 1 curved face and 1 flat face.

It has 1 curved edge.

- Two- dimensional shapes have only length and breadth.
- Three dimensional shapes have length, breadth and height or depth.
- Three-dimensional (or 3-D) shapes can be visualized on a two dimensional (or 2-D) surface.
- A net is a skeleton-outline in 2-D, which when folded results in a 3-D shape. The same solid can have several types of nets.
- Dice are cubes with dots on each face: Opposite faces of a die always have a total of seven dots on them. Generally, dice have number, 1 to 6 on their faces.
- A solid can be sketched in two ways.

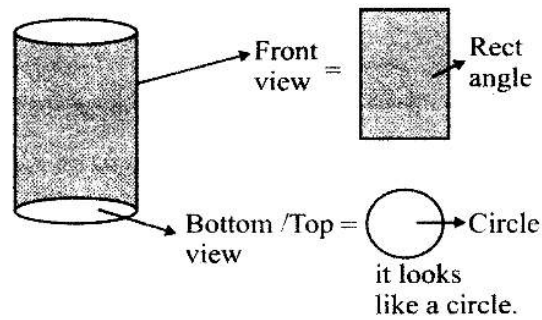
(a) An **oblique sketch** which does not have proportional faces but gives a realistic feel of the 3-D solid.  
e.g., Oblique sketch of a cuboid.



(b) An **isometric sketch**, drawn on an isometric dot paper, which has proportional measurements of the solid.

- Different sections of a solid can be viewed in many ways:
  - (a) Slicing the shape results in the cross - section of the solid.
  - (b) Observing a 2 - D shadow of a 3 - D shape.
  - (c) Looking at the shape from different angles, i.e., the front-view, the side-view and the top-view.

Front and top view of a cylinder



- Description of few more solid shapes

S. No.	Name of the figure	Figure	Description	Components
1.	Triangular prism		A triangular prism resembles a kaleidoscope. It has triangular bases.	Faces: 5 Edges : 9 Vertices : 6
2.	Triangular pyramid or tetrahedron		It has a triangular base:	Face : 4 Edges : 6 Vertices : 4
3.	Square pyramid		It has a square as its base.	Faces : 5 Edges : 8 Vertices : 5
4.	Sphere		No flat face. It has only a spherical face.	Face : 1 Edges : 0 Vertices : 0