ENGINEERING DRAWING
Projection of Planes

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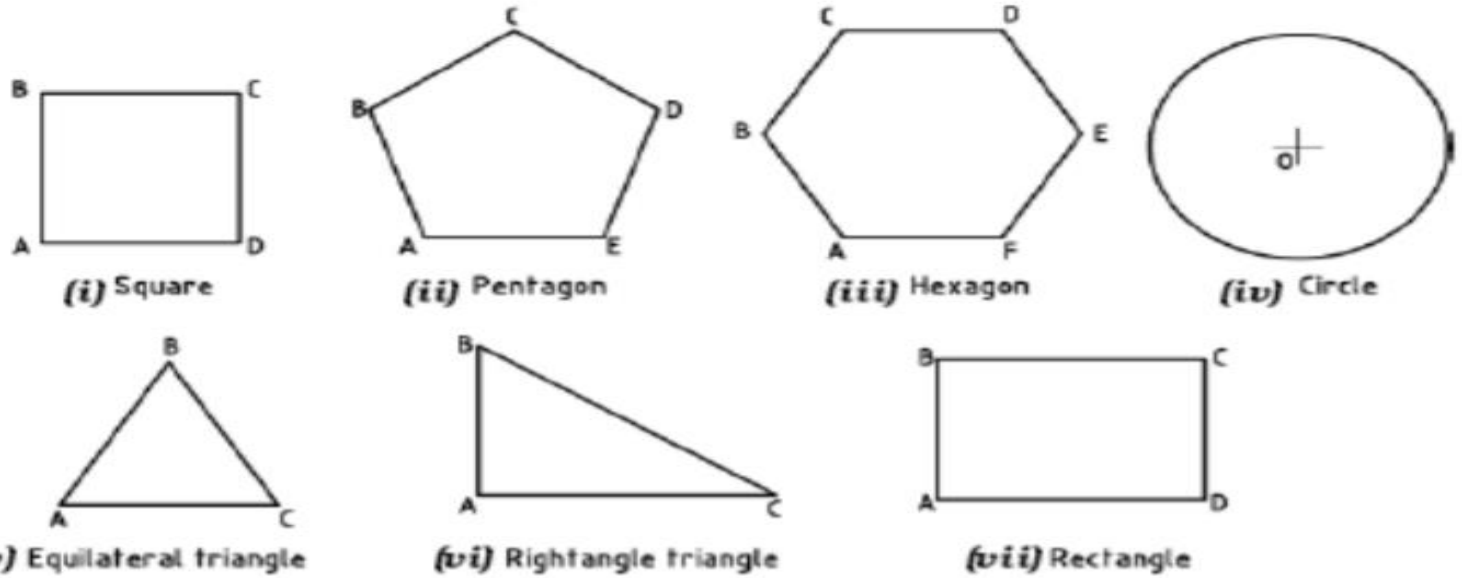
Projection Of Planes

- Projection of planes:
  - Triangular,
  - Square,
  - Rectangular,
  - Pentagonal,
  - Hexagonal and
  - Circular planes

inclined to one reference plane and perpendicular to other

Planes

- Two dimensional object having length and breadth only.
- Its thickness is always neglected.



- Construction of regular hexagon & pentagon - prerequisite

Note……

Data given in the question

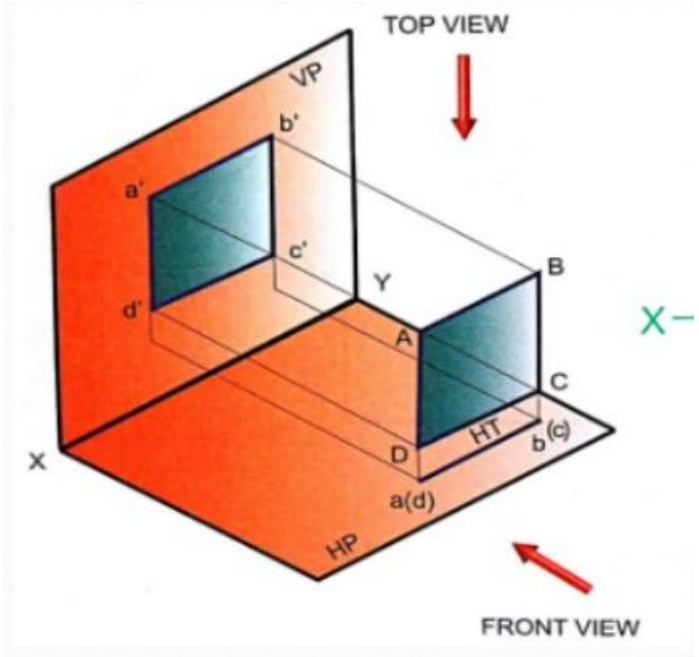
- Description of the plane figure
- Its position with H.P & V.P

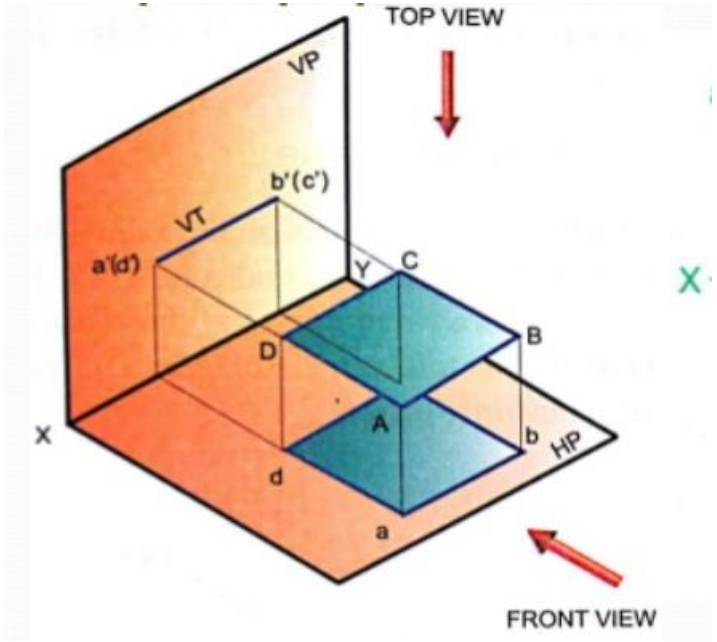
Data to find out

- To locate T.V, F.V & S.V

How the position will be described w.r.t H.P & V.P

- Inclination of it's SURFACE with one of the reference planes will be given
- Inclination of one of it's EDGES with other reference plane will be given


TOP VIEW
VP
b'
a'
c'
d'
Y
B
A
C
D
HT
b (c)
a(d)
X
HP
FRONT VIEW


TOP VIEW
VP
b'(c')
VT
a'(d')
Y
C
B
D
A
X
b
HP
d
a
FRONT VIEW

Trace of a Plane

Trace of a plane – Extension of a given plane shape to the reference plane (H.P or V.P) to which it is perpendicular or inclined.

- The plane meets the H.P or V.P as a line
- This line is called trace of a plane

Horizontal Trace (HT)

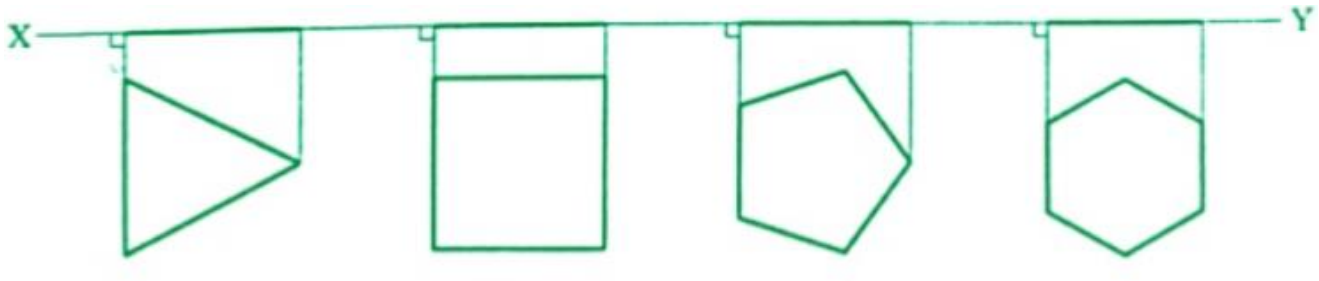
- The line in which the plane shape meets the H.P is called HT

Vertical Trace (VT)

- The line in which the plane shape meets the V.P is called VT

Simple Positions

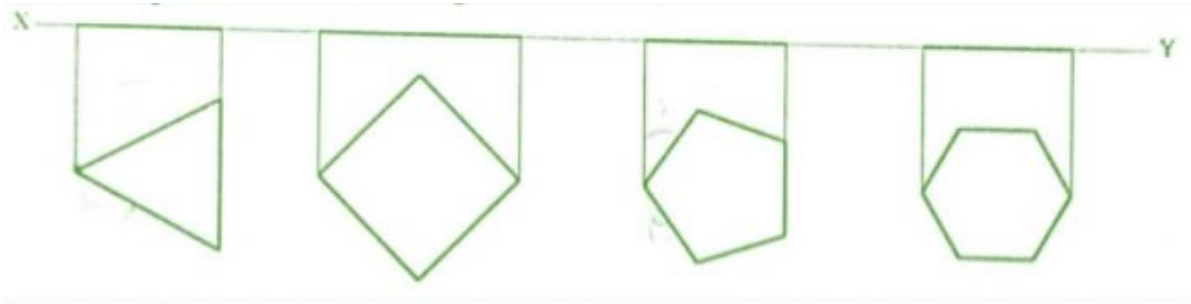
- Plane resting on one of its base side on H.P



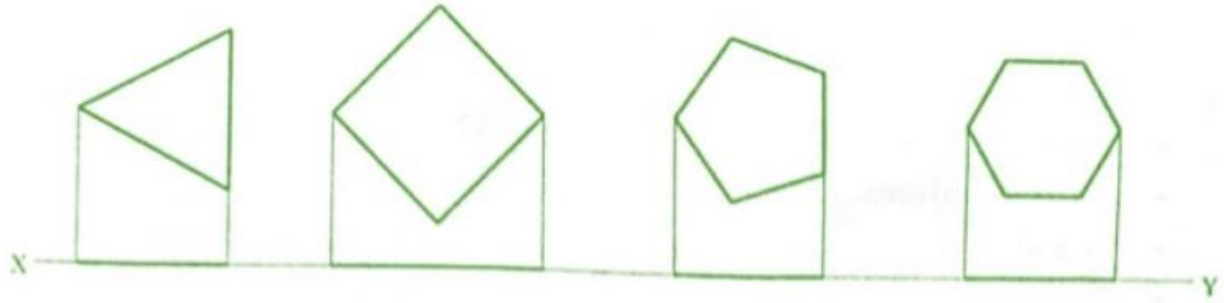
- Plane resting on one of its base side on V.P

Simple Positions

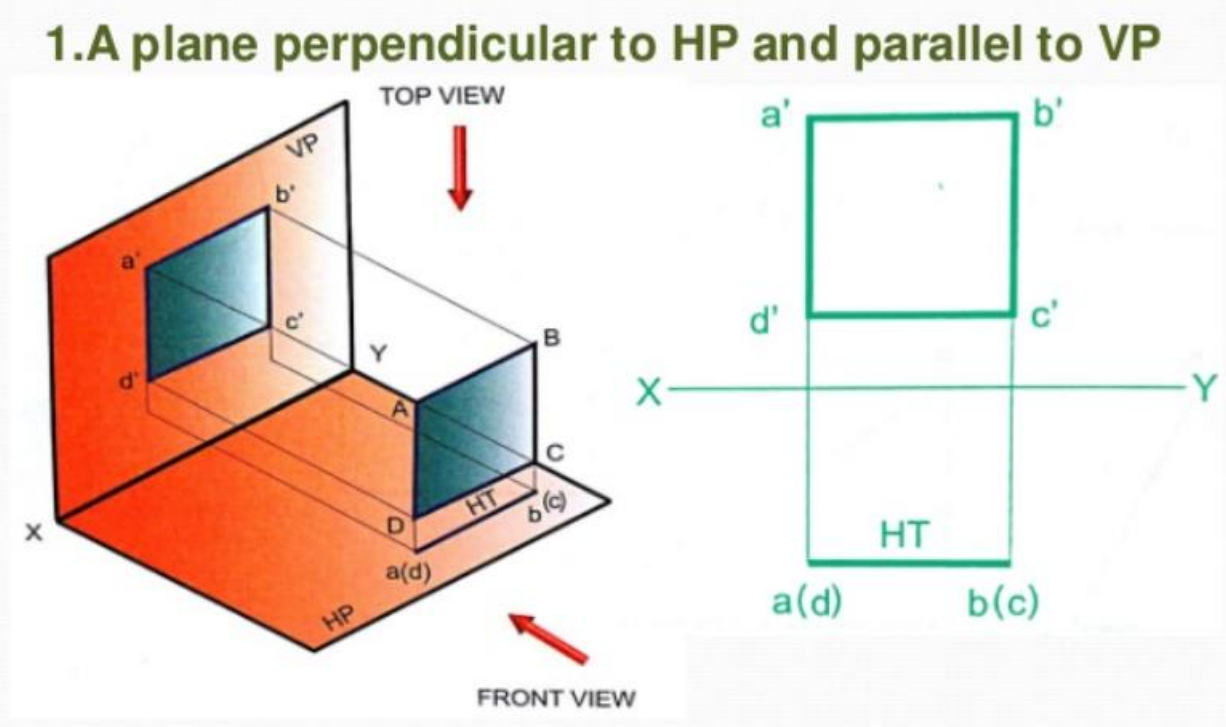
- Plane resting on one of its corner on H.P



- Plane resting on one of its corner on V.P

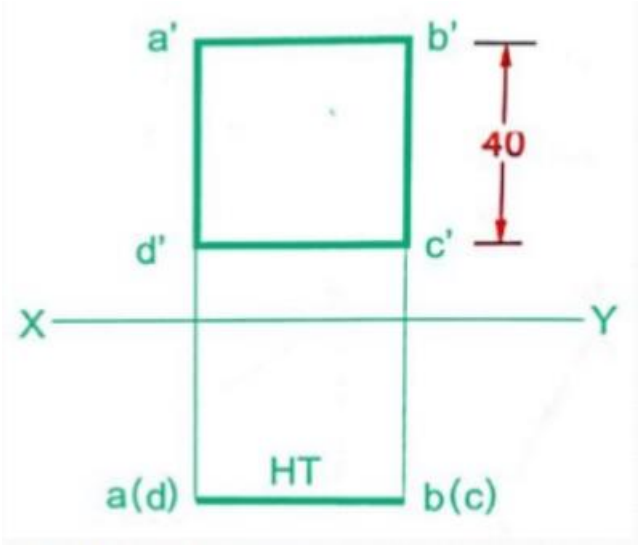


Plane perpendicular to HP parallel to VP

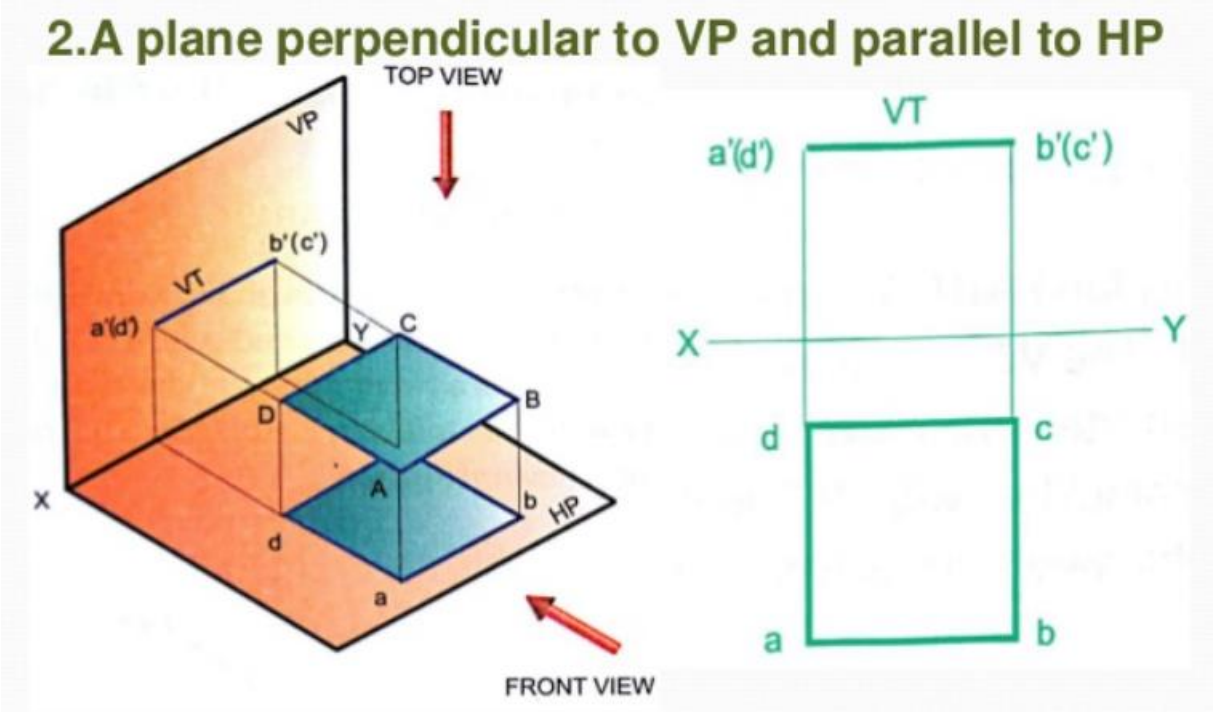


Plane perpendicular to HP parallel to VP

A square lamina ABCD of side 40 mm is perpendicular to HP and parallel to VP. Draw its projections

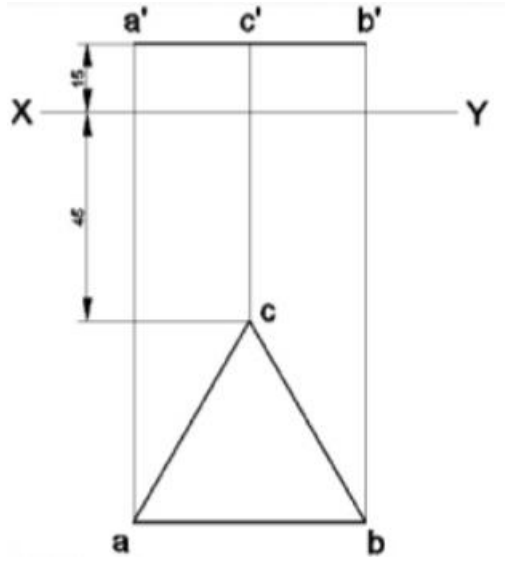


Plane perpendicular to VP parallel to HP



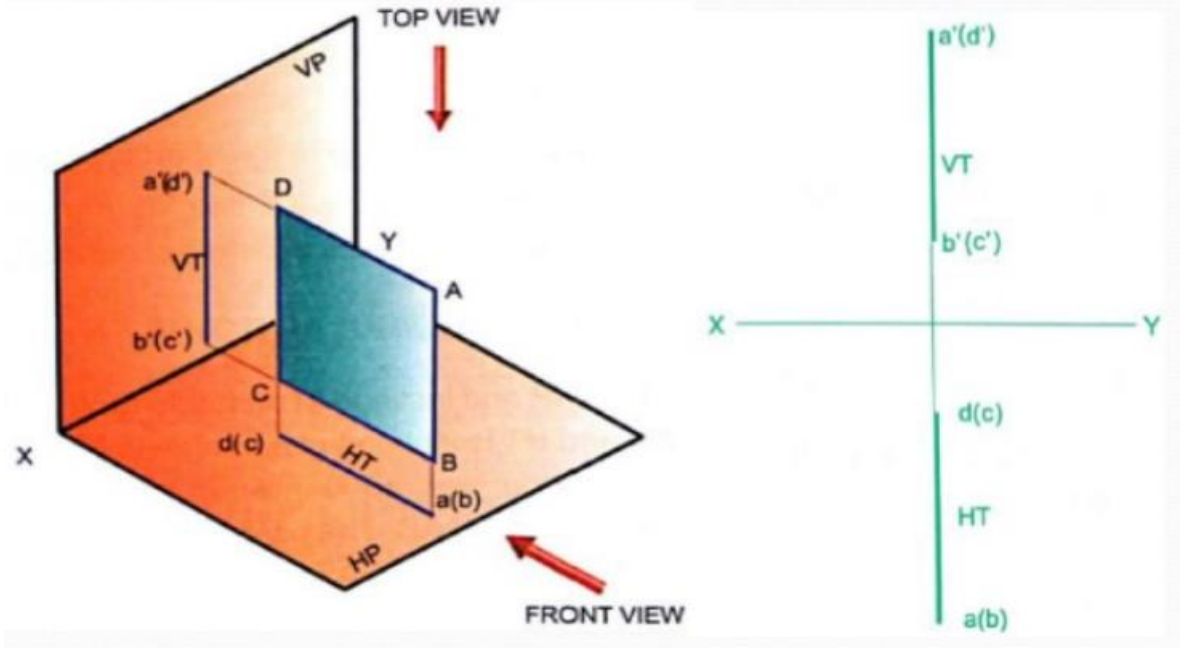
Plane perpendicular to VP parallel to HP

An equilateral triangle ABC of 50 mm side has its plane parallel to HP and side AB parallel to VP. Draw its projections when the corner C is 15 mm from HP and 45 mm from VP.

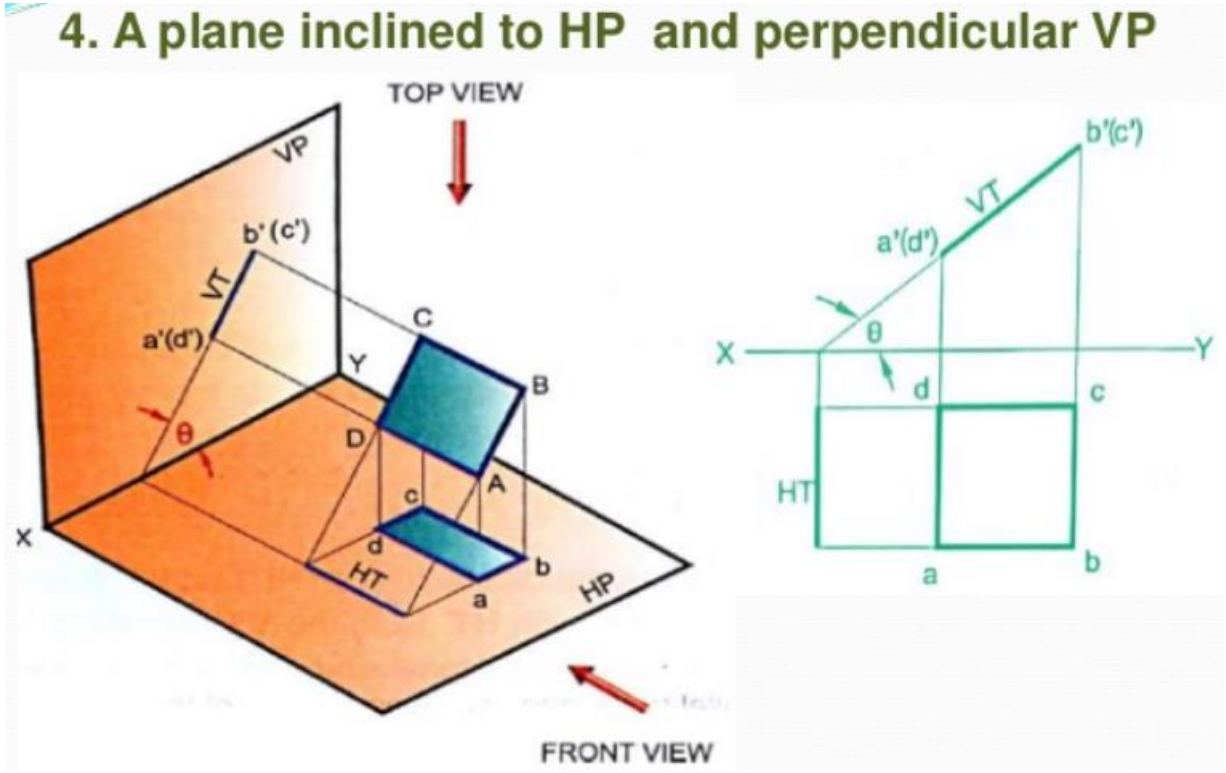


Plane perpendicular to VP and HP

3.A plane perpendicular to both VP and HP

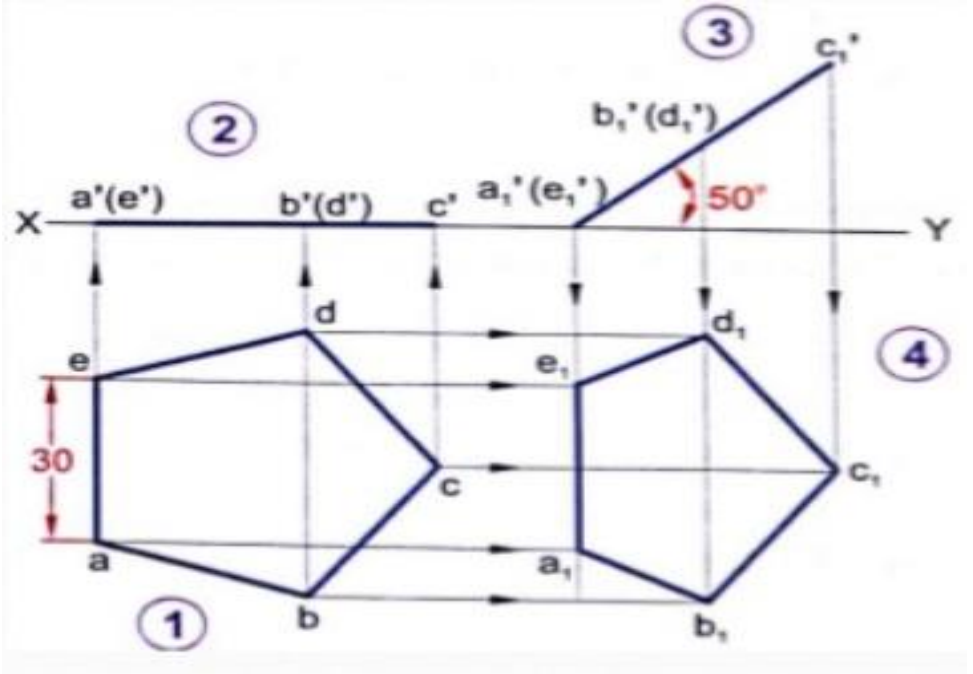


Plane inclined to HP and perpendicular to VP



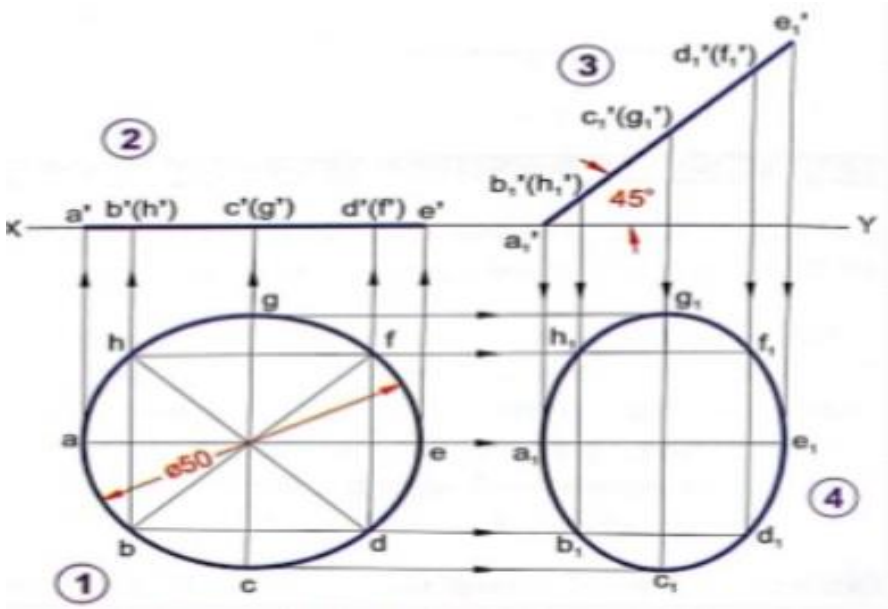
Plane inclined to HP and perpendicular to VP

A pentagonal plate of side 30 mm is placed with one side on the HP and the surface inclined at 50˚to HP and perpendicular to VP. Draw the projection of lamina.

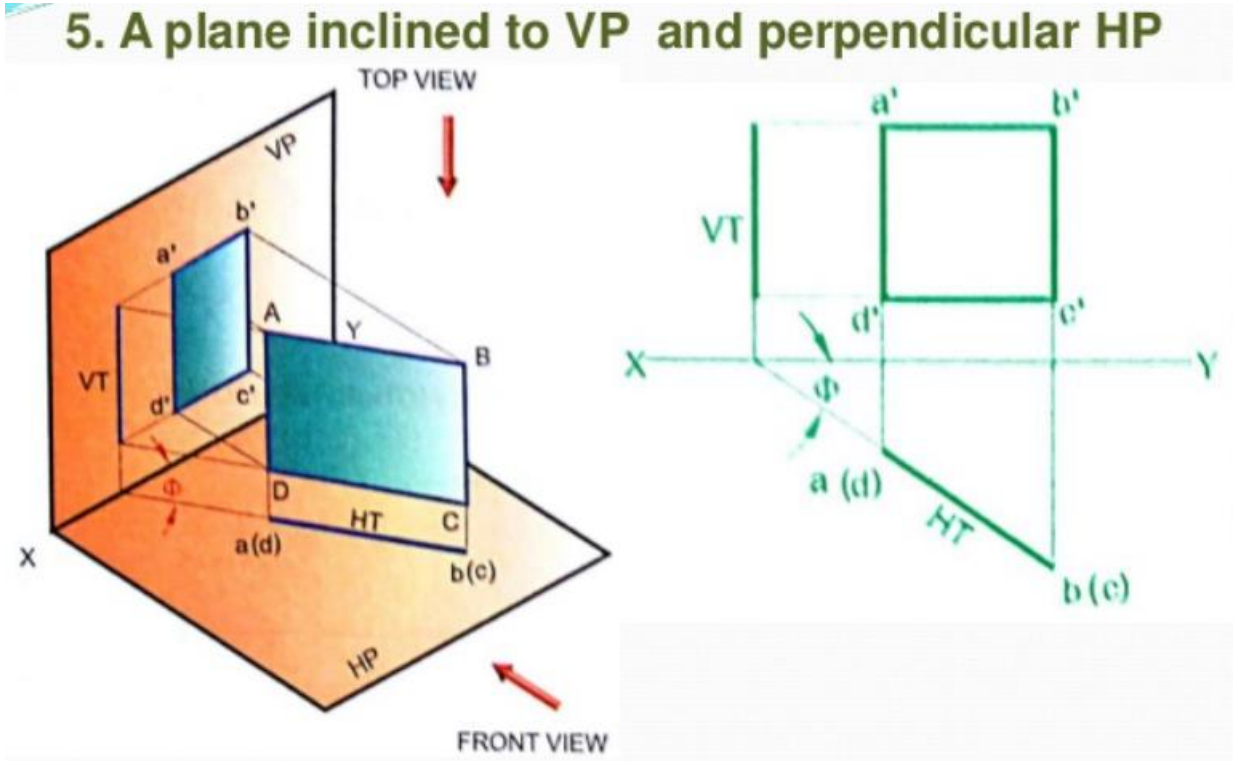


Plane inclined to HP and perpendicular to VP

A circular plate of diameter 50 mm is resting on HP on a point on the circumference with its surface inclined at 45˚to HP and perpendicular to VP. Draw the projection of lamina.

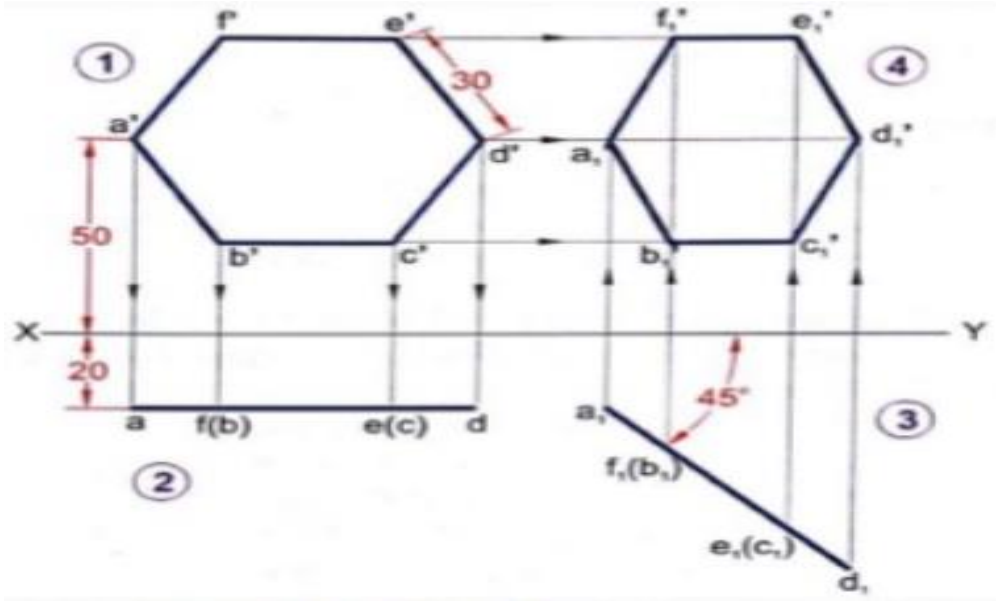


Plane inclined to VP and perpendicular to HP

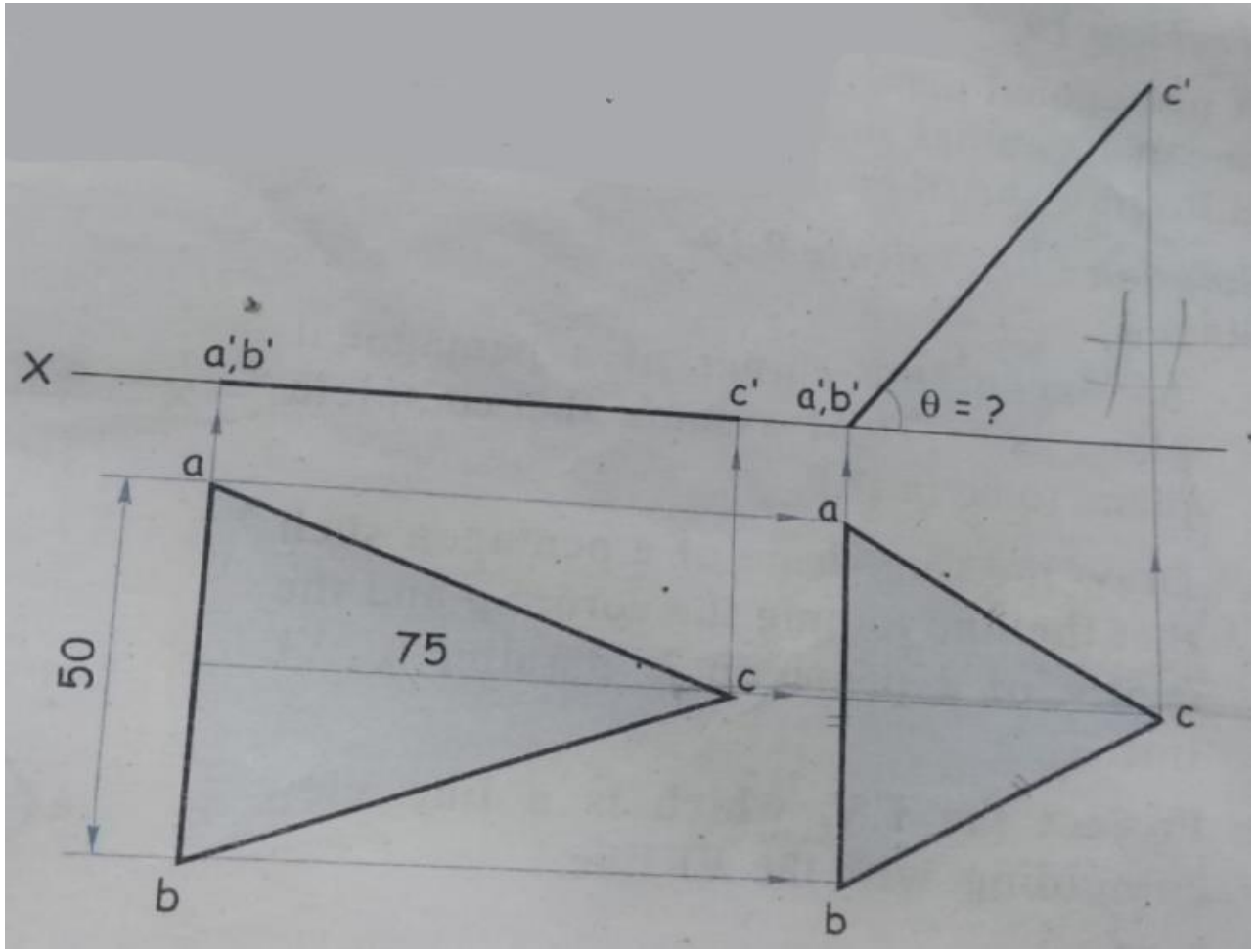


Plane inclined to VP and perpendicular to HP

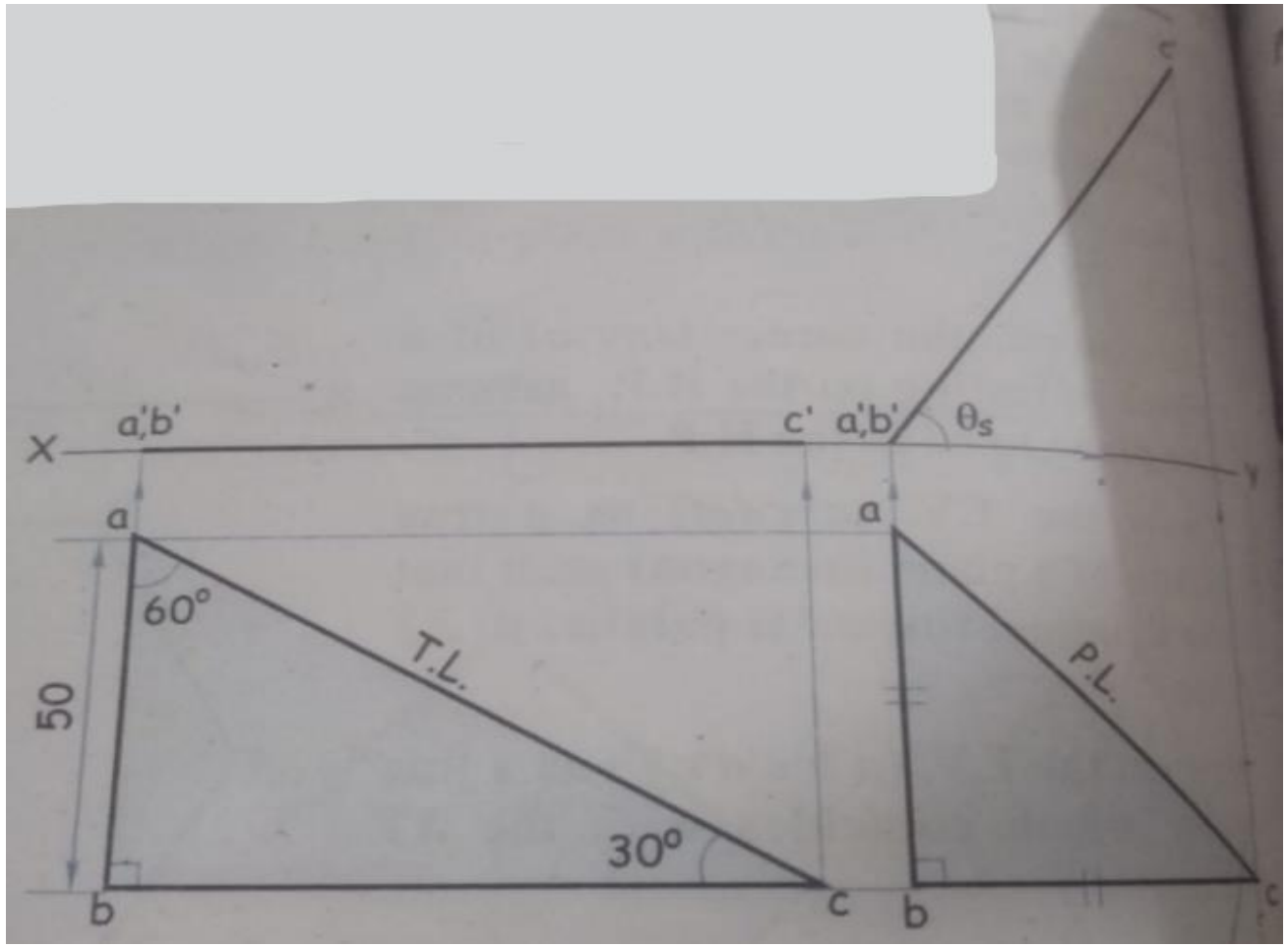
A hexagonal plate of side 30 mm has a corner at 20 mm from VP and 50 mm from HP. Its surface is inclined at 50˚ to VP and perpendicular to HP. Draw the projection of lamina.



An isosceles triangular plate of 50 mm base and 75 mm altitude appears as an equilateral triangle of 5o mm in top view. Draw the projection of a plate if its 50 mm long edge is on the HP. What is the inclination of a plate with the HP?



A 30˚- 60˚- 90˚ set square has its shortest edge 50 mm long and is in the HP. The TV of the set square is an isosceles triangle. Draw projections. Measure the inclination of a plane with the HP.



A pentagonal plate of 30 mm side has one of its side in the VP. The corner opposite to this side contained by the HP is 20 mm in front of the VP. Draw the projections and find inclination of a surface with the VP