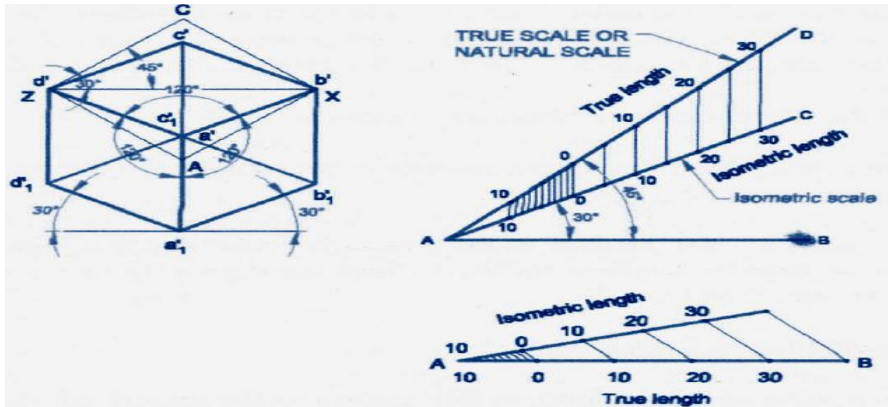


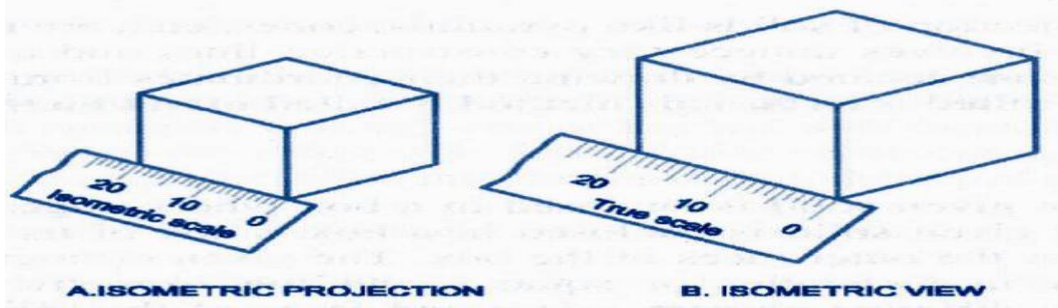
Unit-5

ISOMETRIC PROJECTION



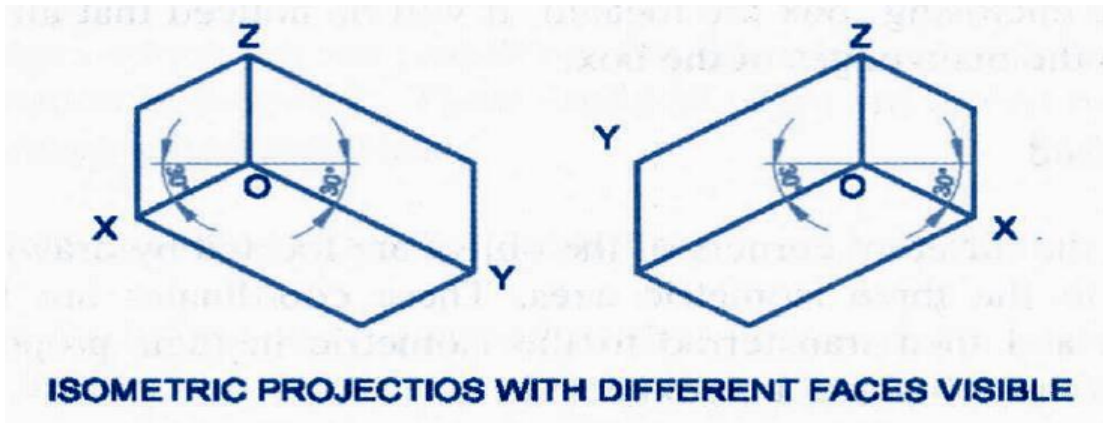
Importance Points in Isometric:

1. For drawing the isometric, the object must be viewed such that either the front -right or the left edges becomes nearest.
2. All vertical edges of the object remain vertical in isometric
3. The horizontal edges of the object which are parallel to the isometric axes are drawn at 30° to the horizontal.
4. The inclined edges which are not parallel to the isometric axes should not be drawn at the given inclination in isometric. These inclined edges are drawn by first locating the end points in isometric and then joined.
5. All circles are represented as ellipses in isometric.
6. All construction lines have to be retained as thin lines and the visible edges are to be shown as thick lines.
7. Generally the hidden edges need not be shown in isometric unless otherwise required either for locating a corner, or an edge, or face, or mentioned.
8. Unless otherwise specifically mentioned to draw the isometric view or isometric drawing all dimension lines parallel to the isometric unless otherwise if mentioned.
9. No dimensions are indicated in isometric unless otherwise mentioned.
10. The given orthographic views need not be drawn unless required for consideration



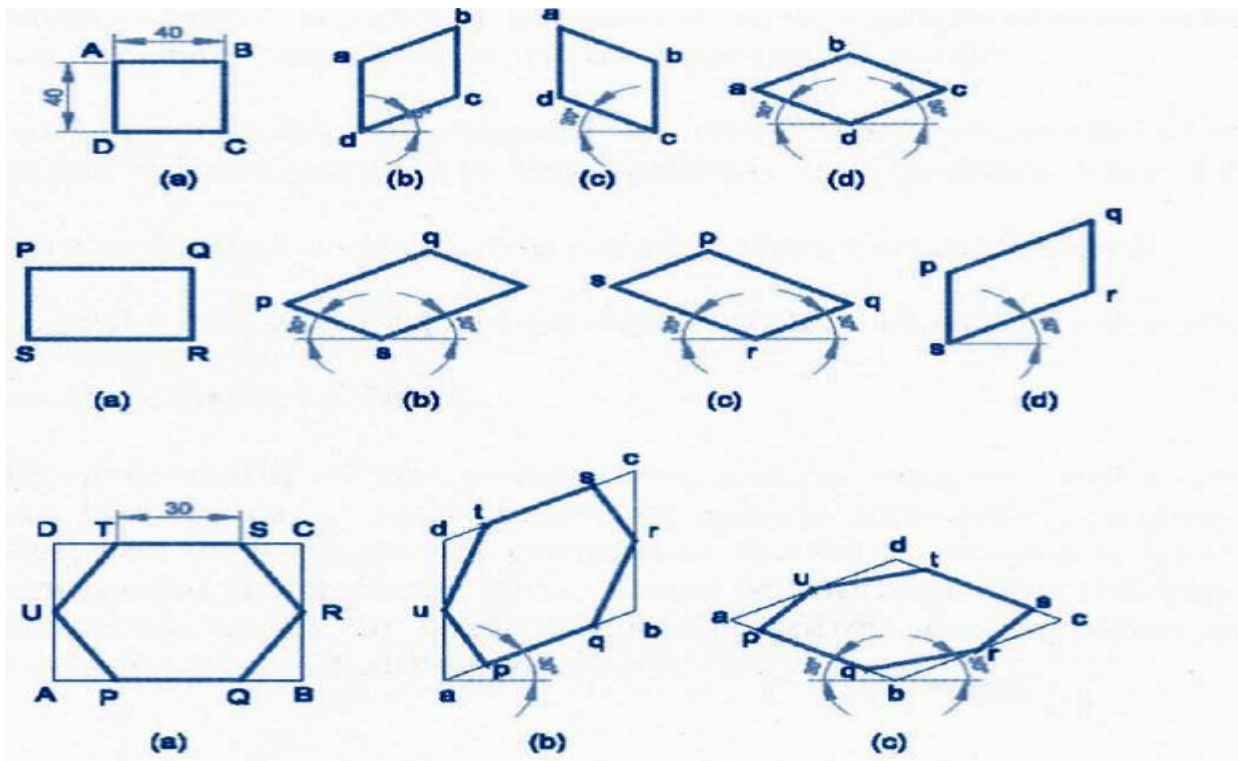
A. ISOMETRIC PROJECTION

B. ISOMETRIC VIEW

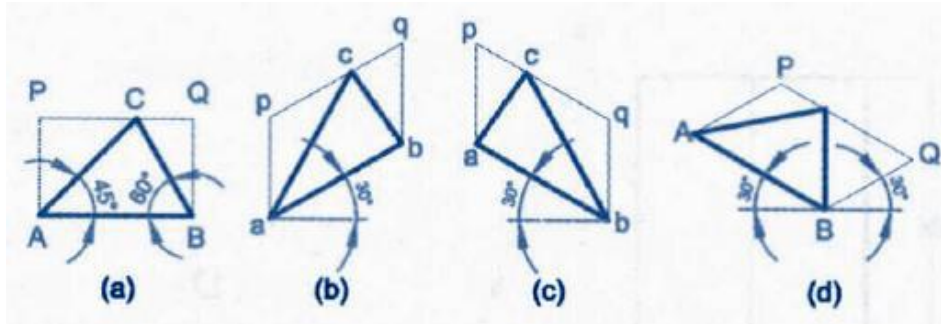


ISOMETRIC PROJECTIOS WITH DIFFERENT FACES VISIBLE

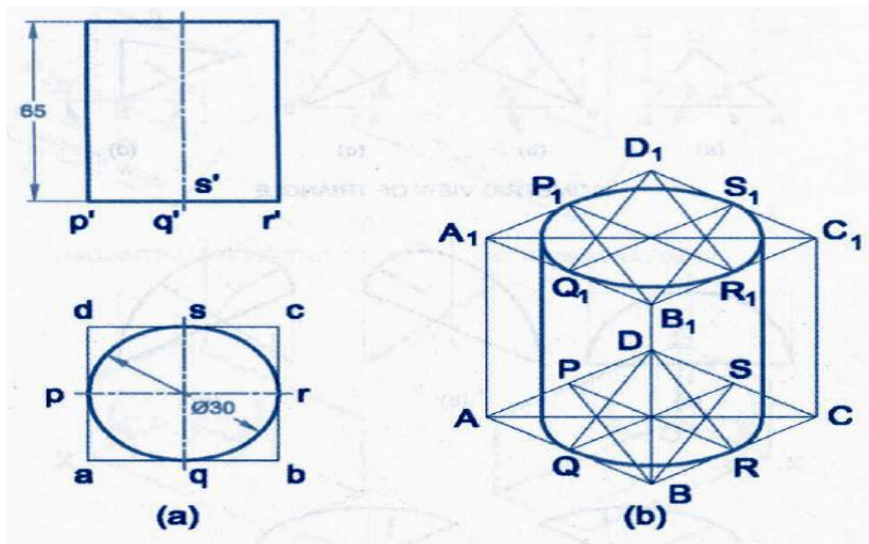
Isomertric view for different geometrical surface.



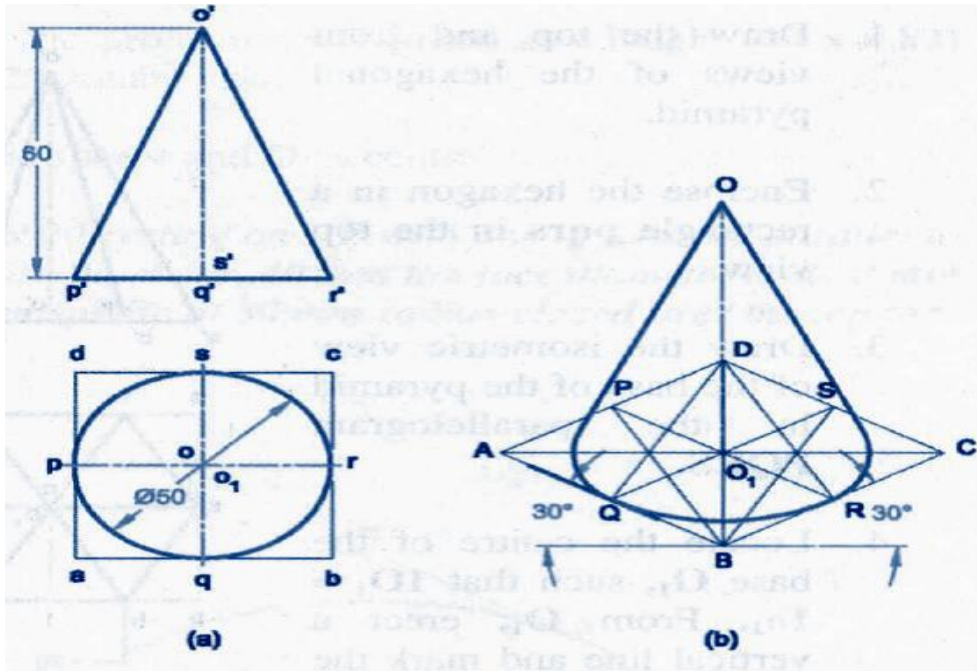
Isometric view of triangle



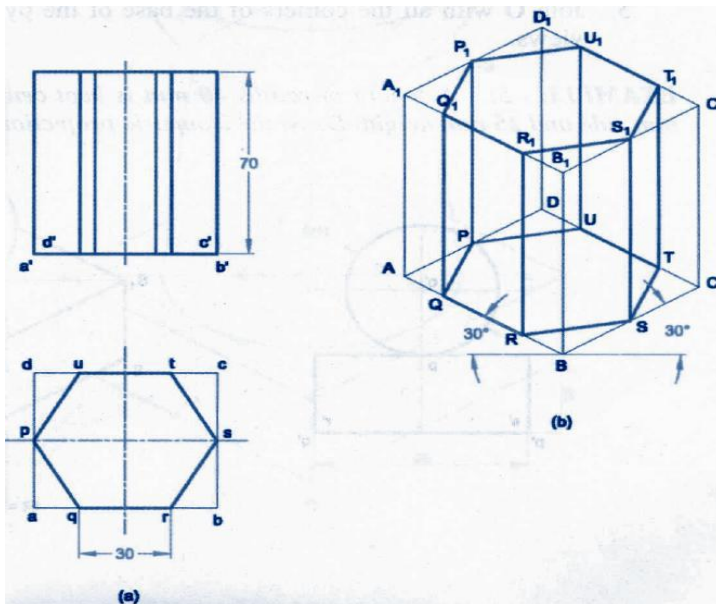
1) Draw the isometric view of a cylinder of diameter 30 mm and height 65mm.



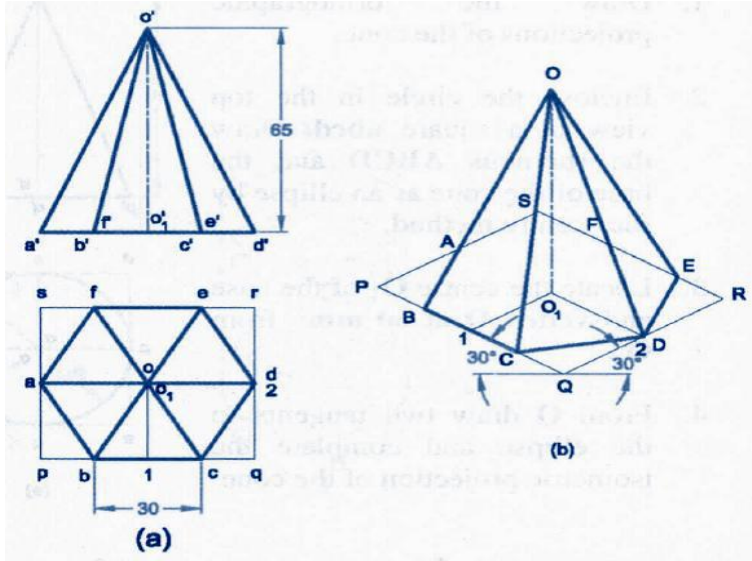
2) Draw the isometric view of a cone diameter 50 mm and height 60mm.



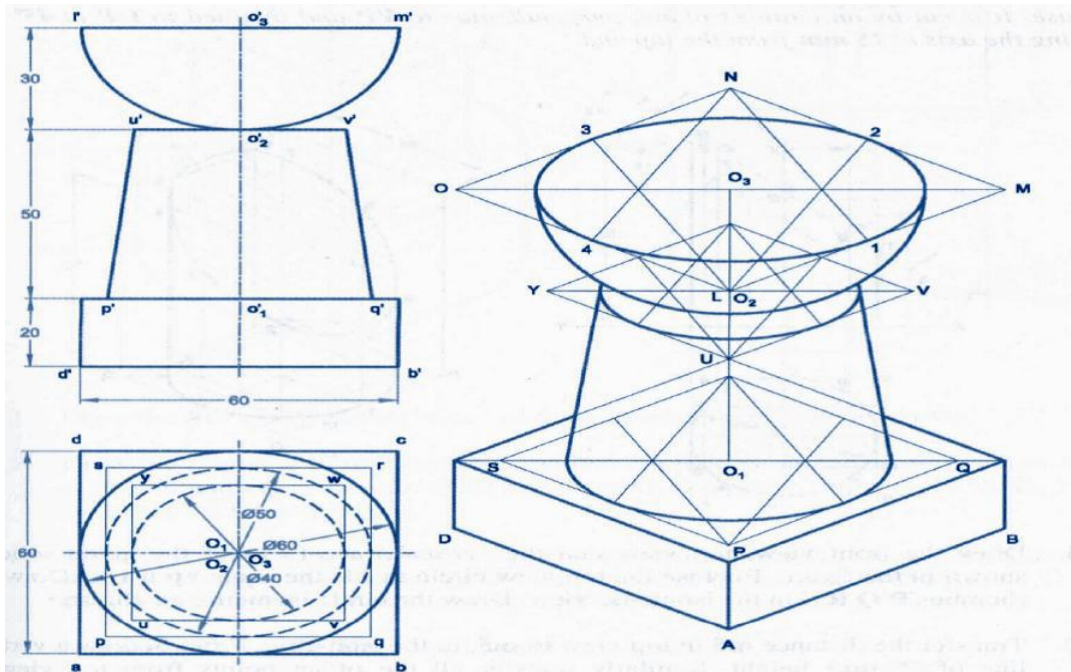
3) Draw the isometric view and isometric projection of a hexagonal prism of abase side 30mm and height 70mm when it rests on one of its ends on the H.P. with two of its base sides parallel to the VP.



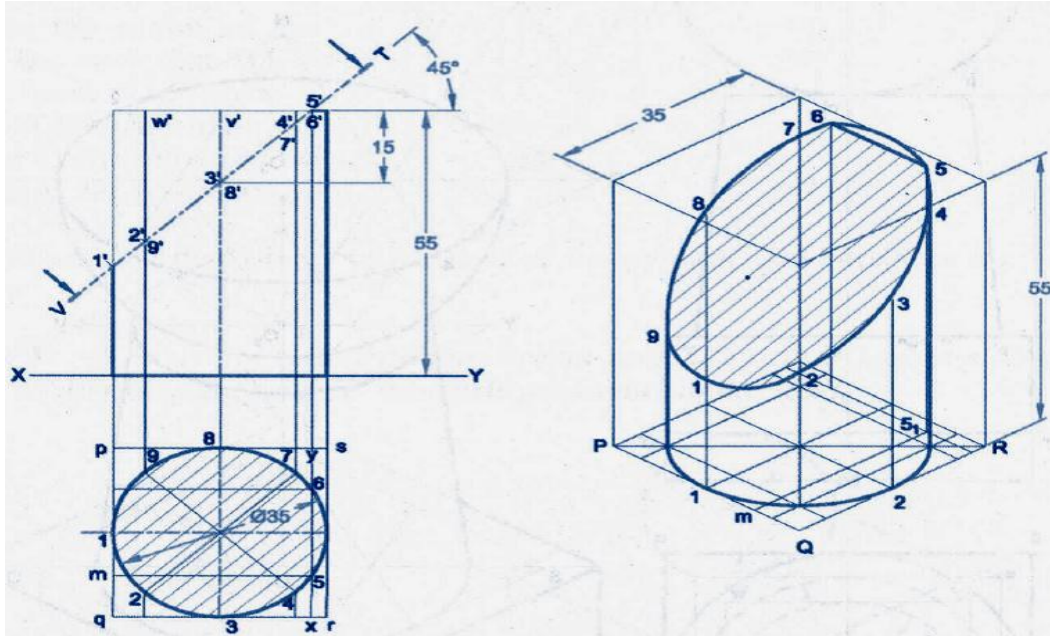
4) Draw the isometric view of a hexagonal pyramid of base of side 30mm and height 65mm resting on its base on the HP with two sides of the base parallel to the VP



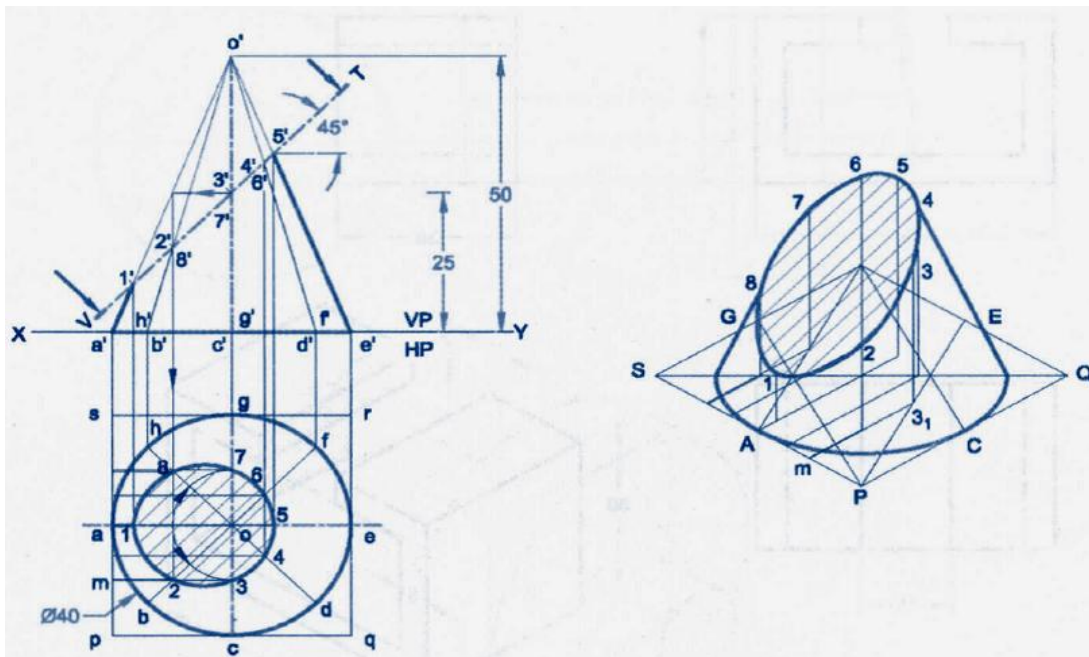
5) Draw the isometric projection of the combined solid shown in figure.



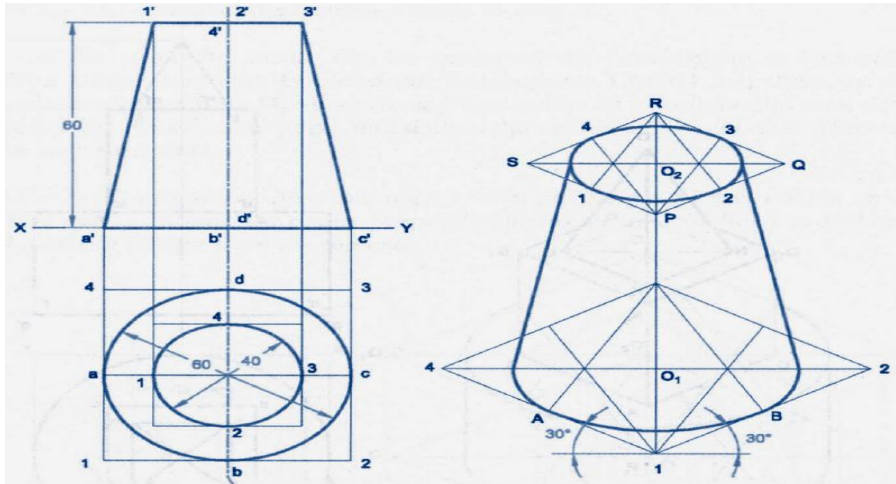
6) Draw the isometric view of a cylinder of diameter 35 mm and height 55 mm when it is resting on one of its ends on the HP. It is cut by a plane perpendicular to the VP and inclined at 45° to the HP. The plane passes through a point on the axis located at 15 mm from the top.



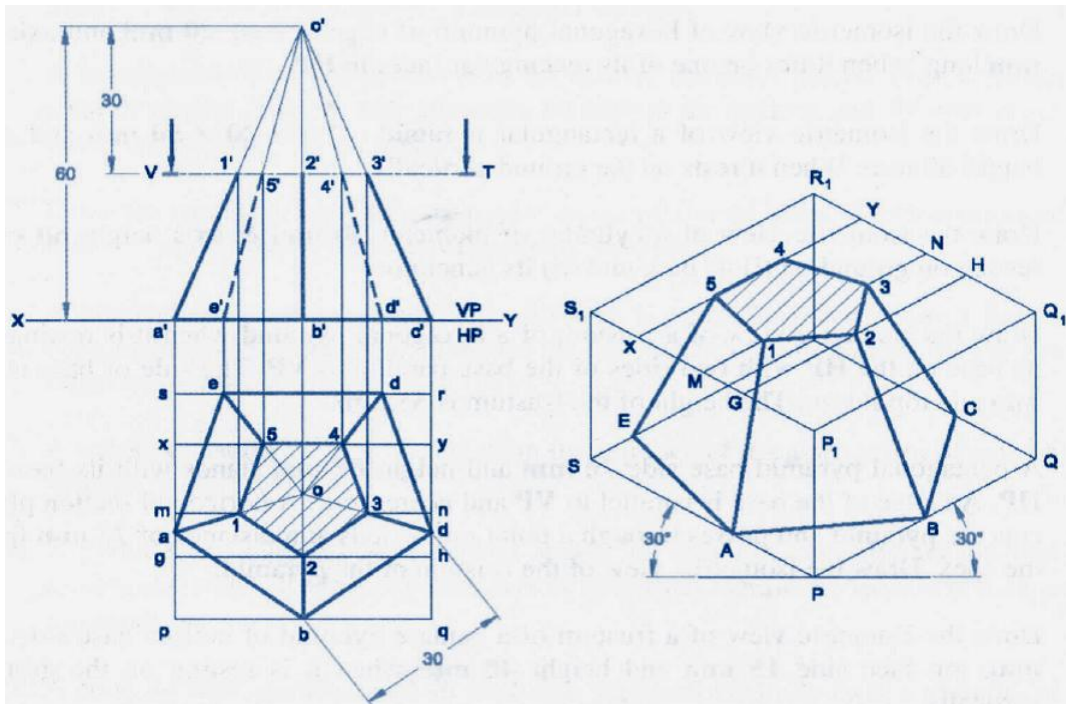
7) A cone of base diameter 40 mm and height 50 mm is resting on its base on the HP. It is cut by a plane perpendicular to the VP and inclined at 45° to the HP. The plane cutting the axis of the cone at a height of 25 mm from its base. Draw the isometric view of the truncated cone.



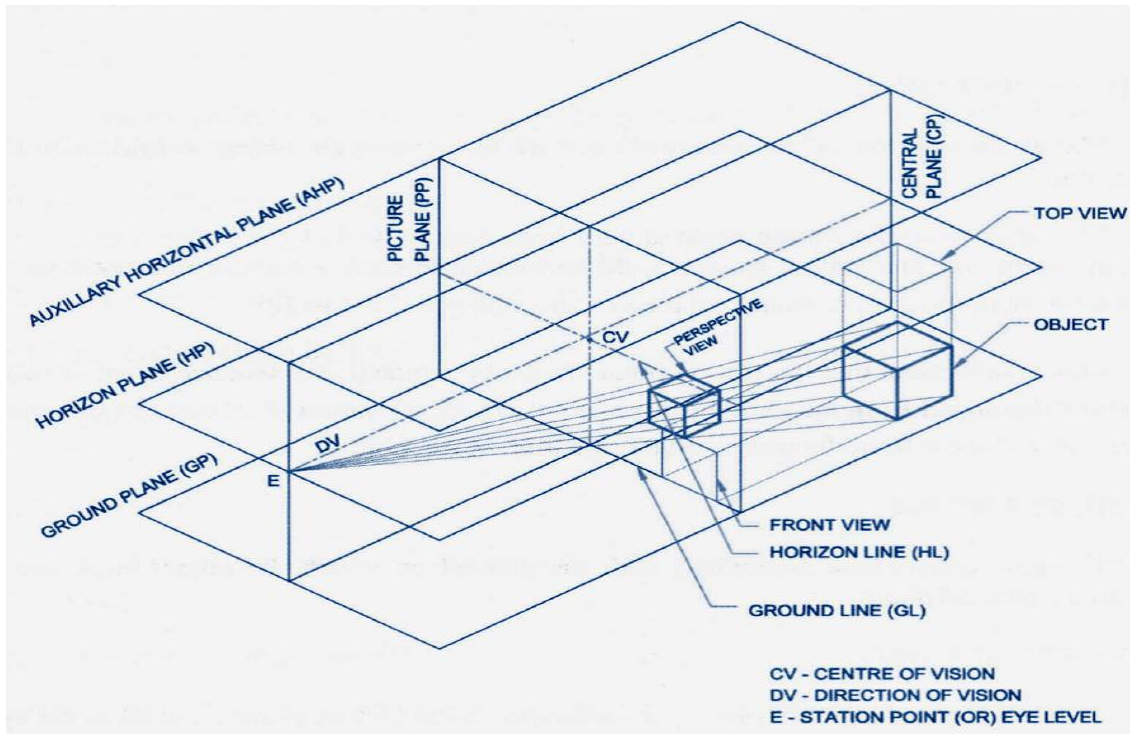
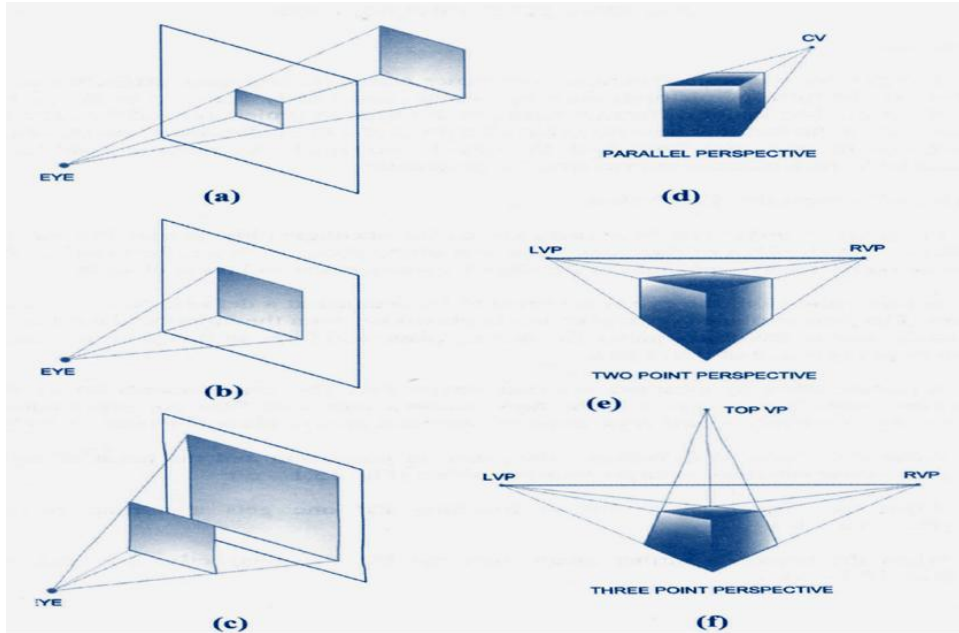
8) Draw the isometric view of a frustum of a cone of bottom base diameter 60 mm, top face diameter 40 mm and height 60 mm when it is resting on the ground vertically.

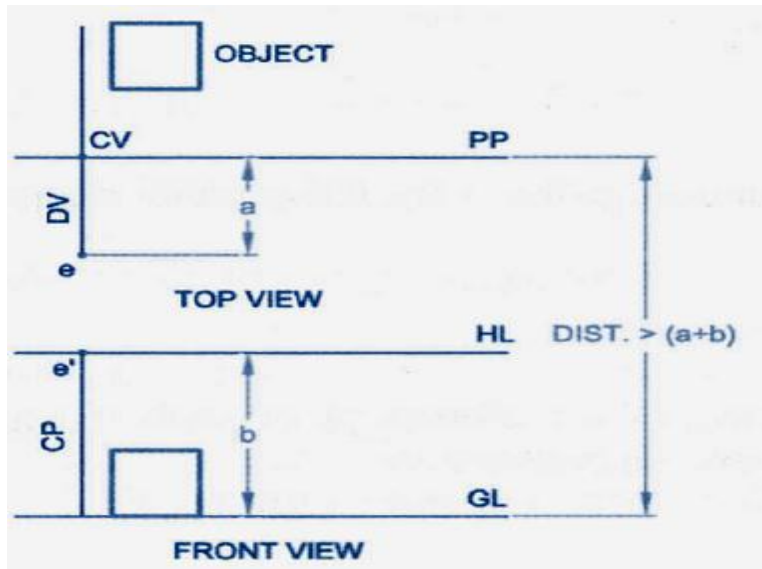


9) A pentagonal pyramid base 30 mm and height 60 mm stand with its base on HP. An edge of the base is parallel to VP and nearer to it. A horizontal section plane cuts the pyramid and passes through a point on the axis at a distance of 30 mm from the apex. Draw the isometric view of the frustum of the pyramid.

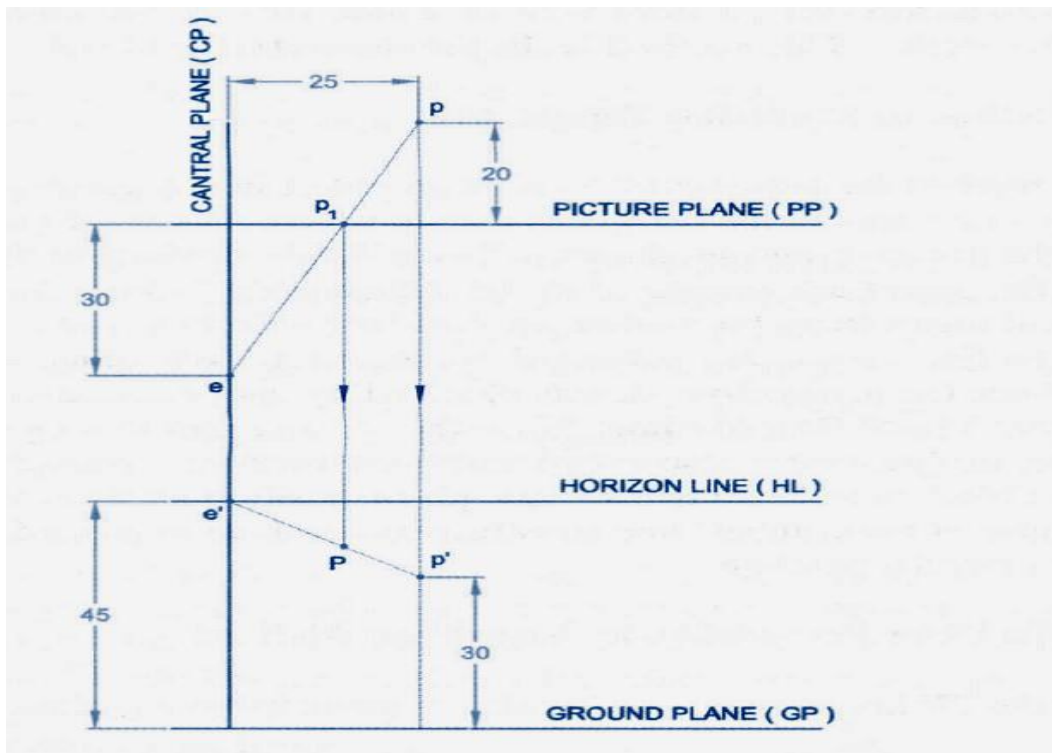


PERSPECTIVE PROJECTION

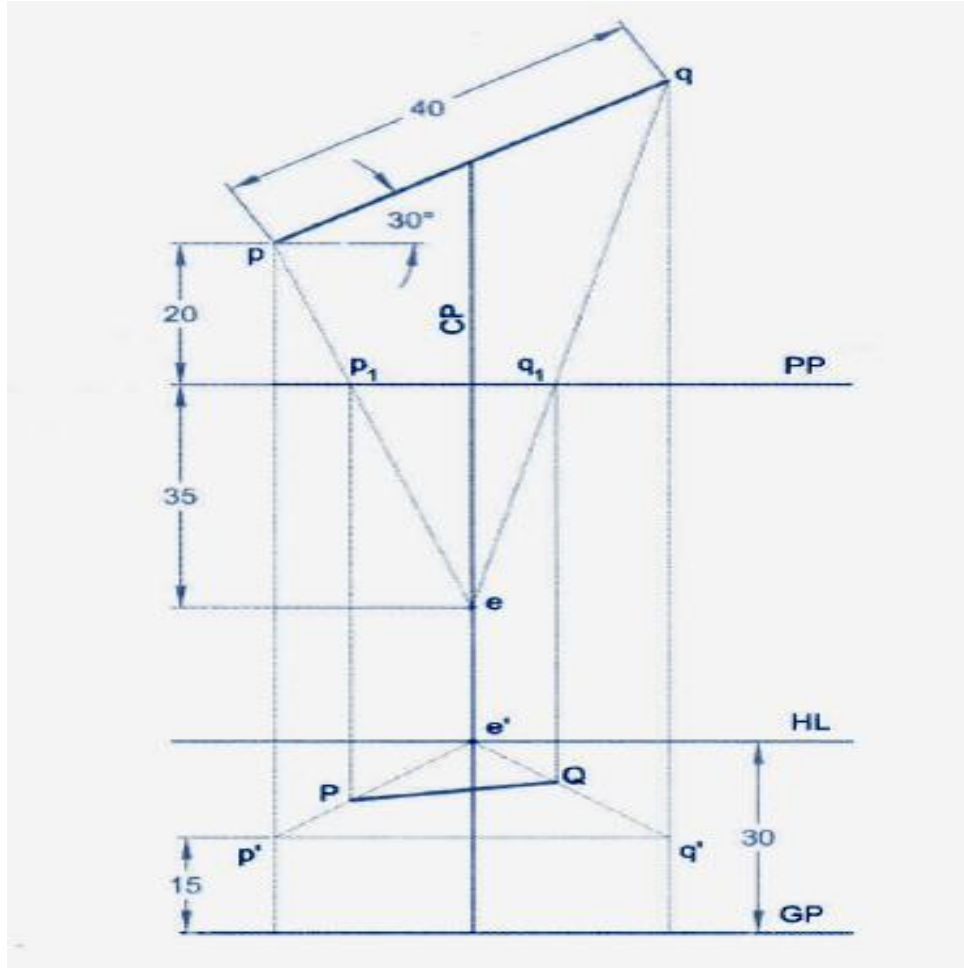




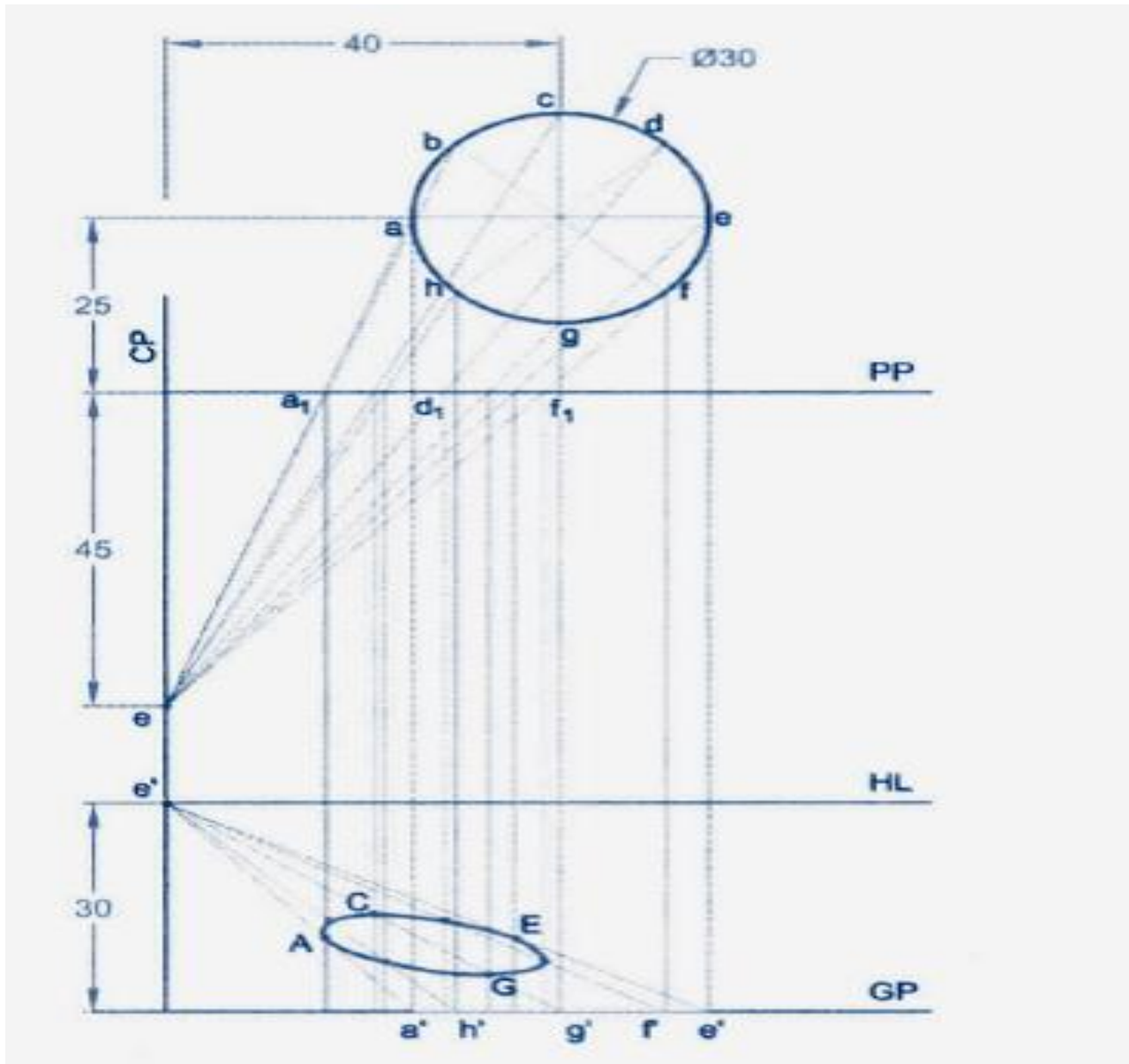
1) A point P is 20 mm behind PP and 30 mm above GP. The central plane is 25 mm to the left of the point. The station point is 30 mm in front of PP and 45 mm above GP. Draw the perspective view of the point.



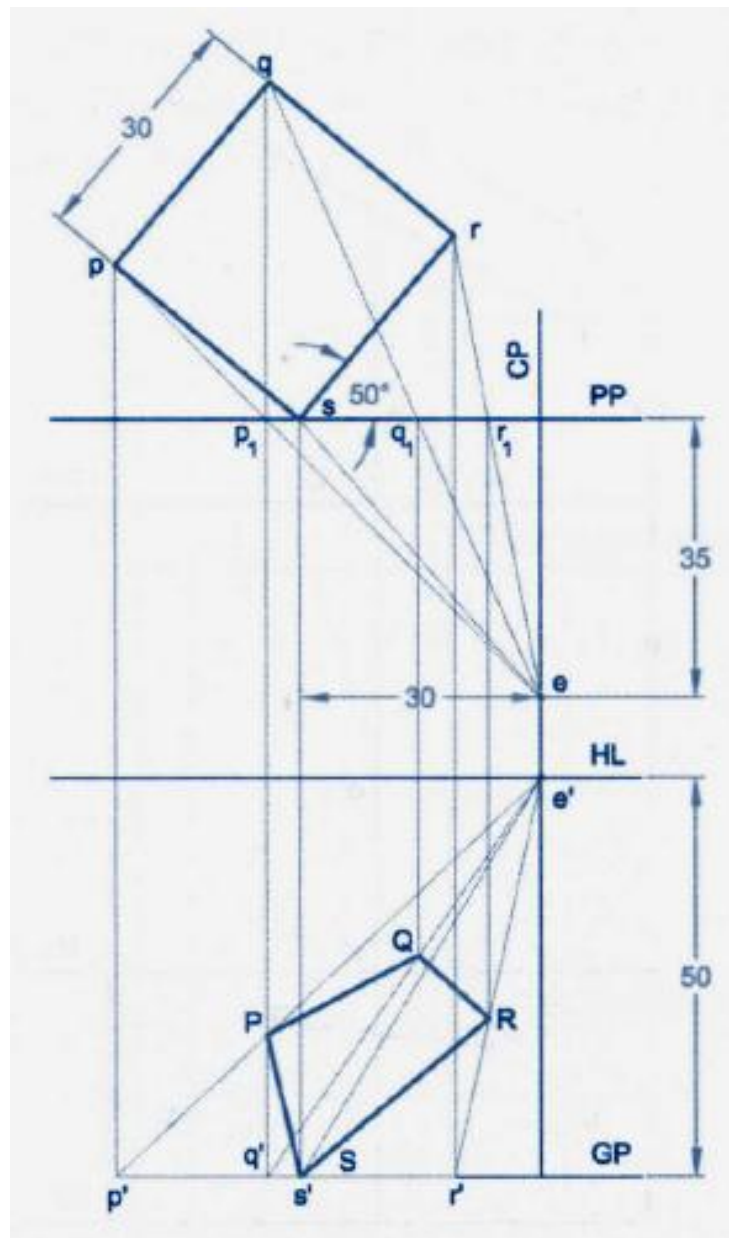
2) A straight line PQ measures 40 mm is parallel to and 15 mm above GP and inclined at 30° to PP with an end 20 mm behind PP. The station point is 30 mm above the ground plane and 35 mm in front of PP and lies in a central plane that passes through the midpoint of PQ. Draw the perspective view.



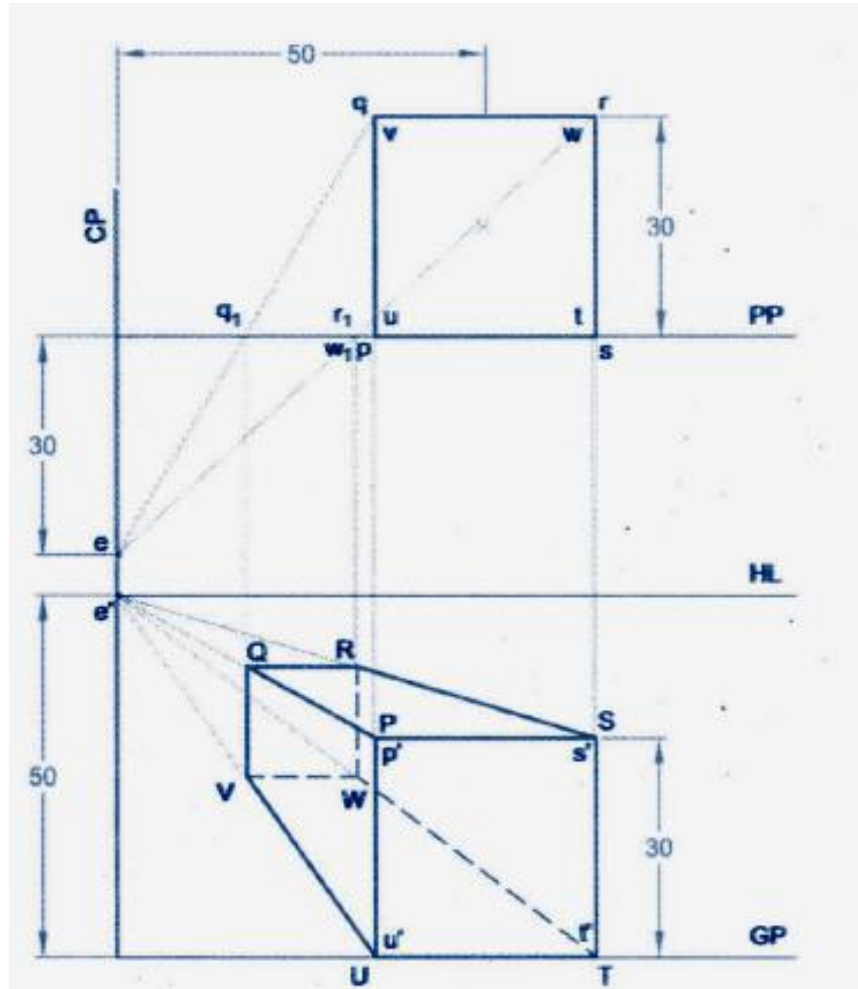
3) A circle of diameter 30 mm lies on the ground plane with its center 25 mm behind the picture plane. Draw its perspective view as seen from a station 45 mm in front of the PP, 30 mm above the ground and 40 mm to the left of the centre of the circle.



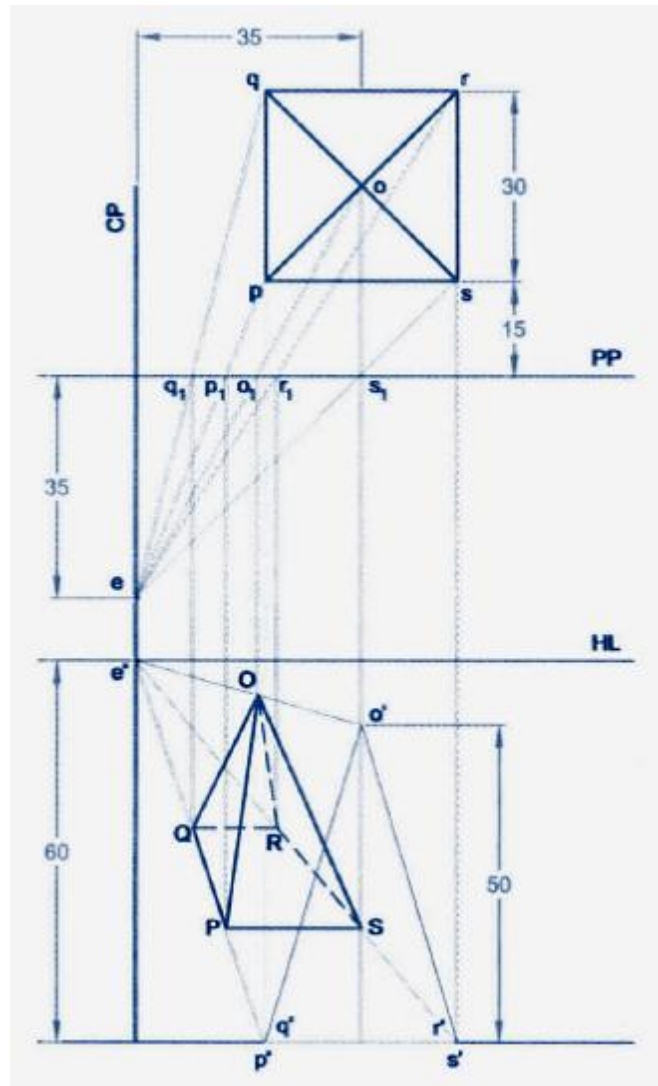
4. A square plane of side 30 mm is resting on ground plane with a corner of the plane touching the picture plane. One side of the plane inclined at an angle 50° to PP. Station point is 50 m in front of PP and 50 mm above GP and 30 mm to the right of the resting corner. Draw the perspective projection of the plane by visual ray method.



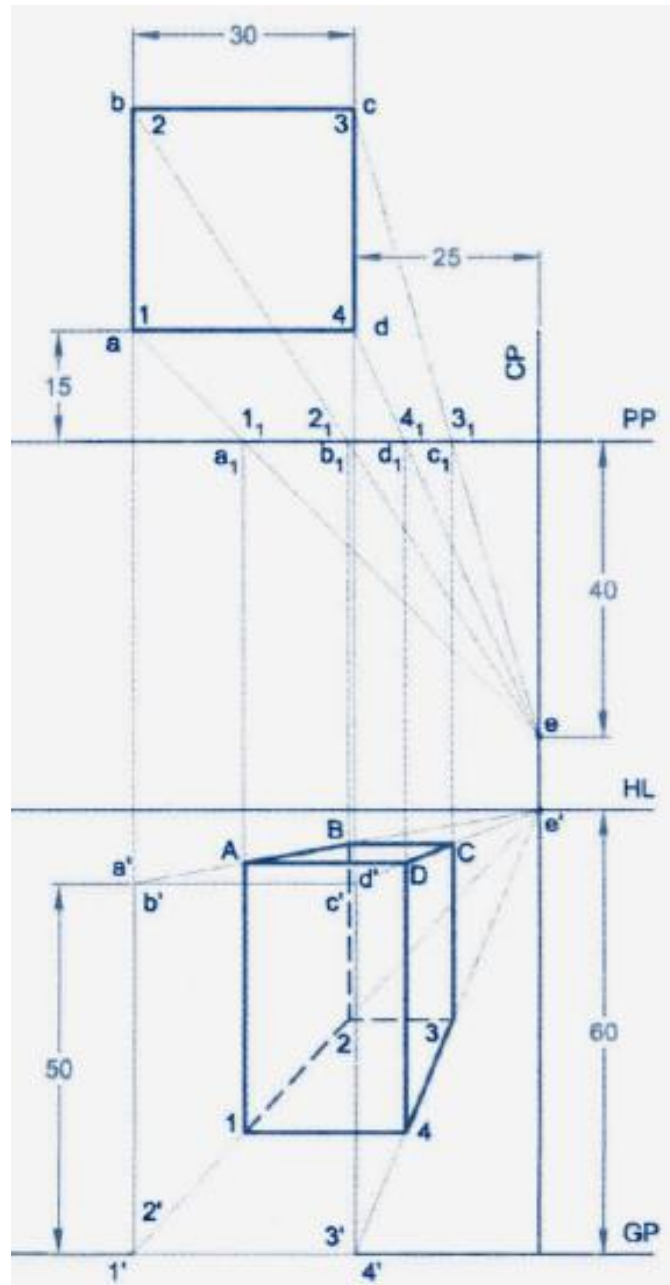
5) A cube of side 30 mm is resting on the ground on one of its faces, with a vertical face in PP. and the rest behind it. The central plane is located 50 mm to the left of the center of the cube. The station point is 30 mm in front of PP and 50 mm above GP. Draw the perspective view of the solid.



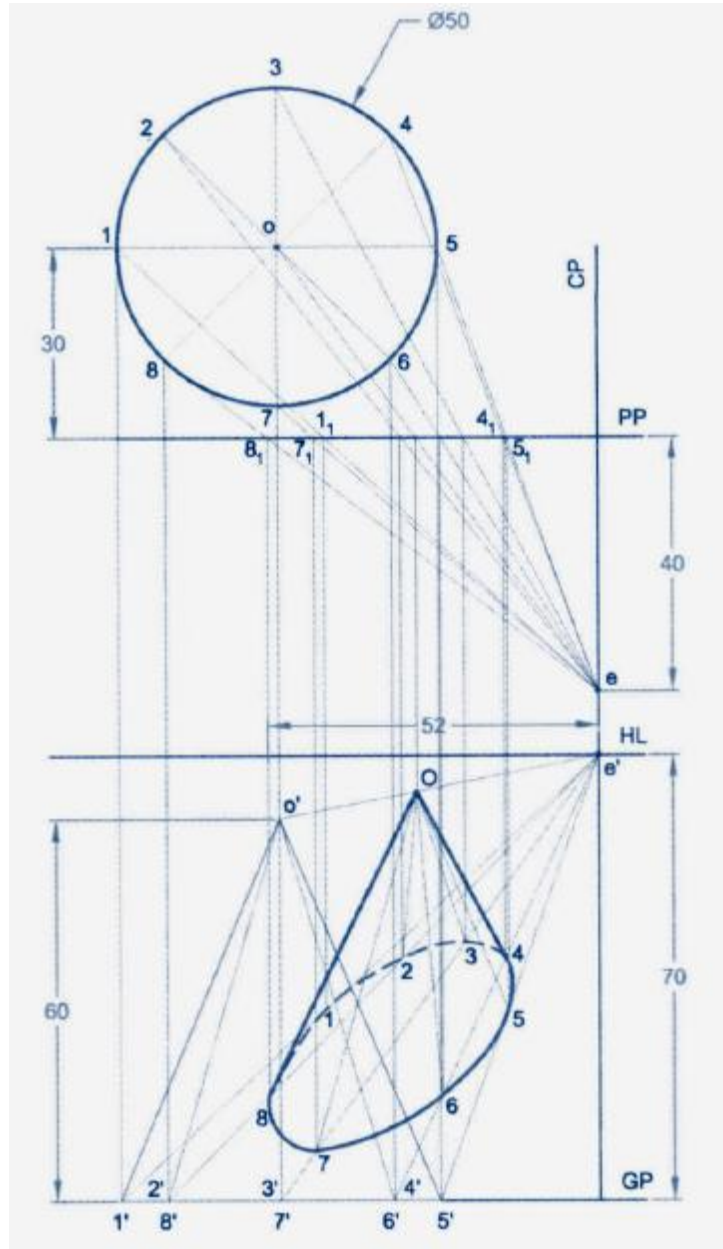
6) A square pyramid of side of base 30 mm and altitude 60 mm stands on the ground vertically with an edge of base parallel to and is 15mm behind PP. The station point is 35 mm in front of PP and 60mm above the ground. The central plane is located 35 mm to the left of the axis of the solid. Draw the perspective projection.



7).A square prism of side 50 mm and height 80 mm is resting on ground plane with one of its ends. One of its rectangular faces is parallel to PP and 15 mm behind it. The station point is 25 mm to the right of the rectangular face on right. Station point is 40 mm in front of PP and 60 mm above GP. Draw the perspective projection by visual ray method



8) A cone of base diameter 50 mm and altitude 80 mm rests on ground plane with its axis 30 mm behind PP. Station point is 40 mm in front of PP, 70 mm above GP. The axis of the cone is 52 mm to the left of station point. Draw the perspective projection by visual ray method.



9) A pentagonal pyramid of 25 mm base side and axis height 50 mm is standing on its base on the ground plane with a base parallel to and 30 mm behind PP. The central plane is 30 mm to the left of the apex and the station point is 50 mm in front of PP and 40 mm above the ground plane. Draw the perspective view of the pyramid.

