



- b) Draw by free hand the top view, front view and right side view of the object shown in figure 1.

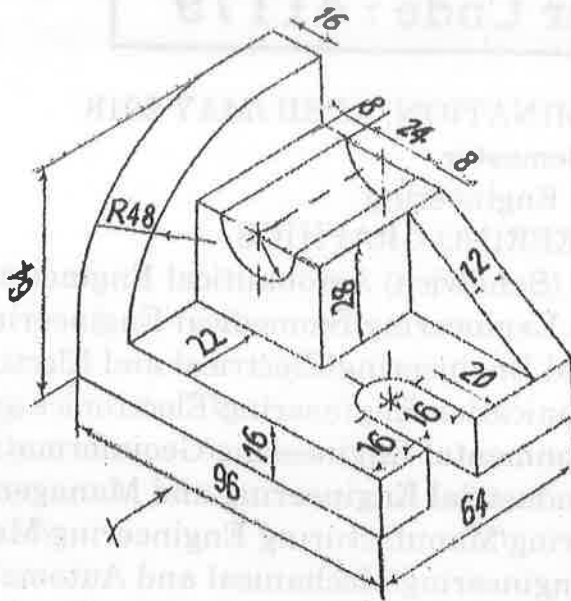


figure 1

2. a) A line AB is in the first quadrant. The top view of the line measures 60 mm and inclined to the reference line by 60° . The end point A is 15 mm above the HP and 30 mm in front of the VP. Draw the projection of the line when it is inclined at 45° to the HP. Find the true length and inclination of the line with the VP and locate the traces.

(OR)

- b) A rectangular lamina of sides 75 mm \times 40 mm is resting on the VP on one of its longer sides. The surface of the lamina is inclined 45° to the VP and the side resting on the VP is inclined 45° to the HP. Draw the projections of the lamina.
3. a) A pentagonal prism of base side 30 mm and axis length 60 mm is resting on the HP on one of its rectangular faces, with the axis inclined 30° to the VP. Draw the projections of the prism.

(OR)

- b) Draw the projections of a cube having side length 30 mm resting on the HP on one of its corners, with the solid diagonal through the resting corner is perpendicular to the HP and parallel to the VP.
4. a) A cylinder of base diameter 50 mm and height 60 mm is resting on the HP on its base. It is cut by a plane perpendicular to the VP and inclined to the HP, such that the true shape of the cut section is an ellipse with major axis 60 mm. The cutting plane also bisects the axis of the cylinder. Draw the sectional top view, sectional front view and true shape of the section. Find the inclination of the cutting plane with respect to the HP.

(OR)



- b) A cone of base 60 mm and height 80 mm is resting on its base on the HP. A cutting plane perpendicular to both the HP and VP cuts the cone a distance 15 mm to the left of the axis. Another cutting plane parallel to the HP and perpendicular to the VP cuts the cone 20 mm from the apex of the cone. Draw the development of remaining portion of the cone.
5. a) Draw the isometric view of a frustum of a hexagonal pyramid with side of base 40 mm and side of top 30 mm. The height of the frustum is 50 mm.
- (OR)
- b) Draw the perspective view of a square pyramid with base side 30 mm and axis height 45 mm. The nearest edge of the base is parallel to and 20 mm behind the picture plane. The station point is situated at a distance of 70 mm in front of the picture plane and 40 mm to the right of the axis of the pyramid and 60 mm above the ground.
-



10. A cone of base 60 mm and height 80 mm is resting on its base on the HP. A cutting plane perpendicular to both the VP and HP cuts the cone at a distance of 25 mm from the top. The cutting plane is parallel to the VP and perpendicular to the HP. The true shape of the section is to be drawn. Draw the development of the remaining portion of the cone.

11. Draw the isometric view of a frustum of a hexagonal pyramid with side of base 40 mm and side of top 20 mm. The height of the frustum is 60 mm.

(10)

12. Draw the perspective view of a square pyramid with base side 80 mm and axis height 45 mm. The ground line of the base is parallel to and 20 mm behind the picture plane. The station point is situated at a distance of 70 mm in front of the picture plane and 45 mm to the right of the axis of the pyramid and 60 mm above the ground.