

TECHNICAL DRAWING - ORDINARY LEVEL - PAPER I
(Plane and Solid Geometry)

MONDAY, 23 JUNE - AFTERNOON 2.00 - 5.00

200 marks

INSTRUCTIONS

- (a) Answer four questions.
- (b) All questions carry equal marks.
- (c) Construction lines must be shown on all solutions.
- (d) Write the number of the question distinctly on the answer paper.
- (e) All dimensions on the question paper are given in millimetres.
- (f) First or third angle projection may be used.

1. The elevation A and end-view B of a solid which has an equilateral triangular hole through it are shown in Fig.1.

- (a) Draw the given views and project a plan from A.
- (b) Project a new plan of the solid which shall include the true shape of the surface S.

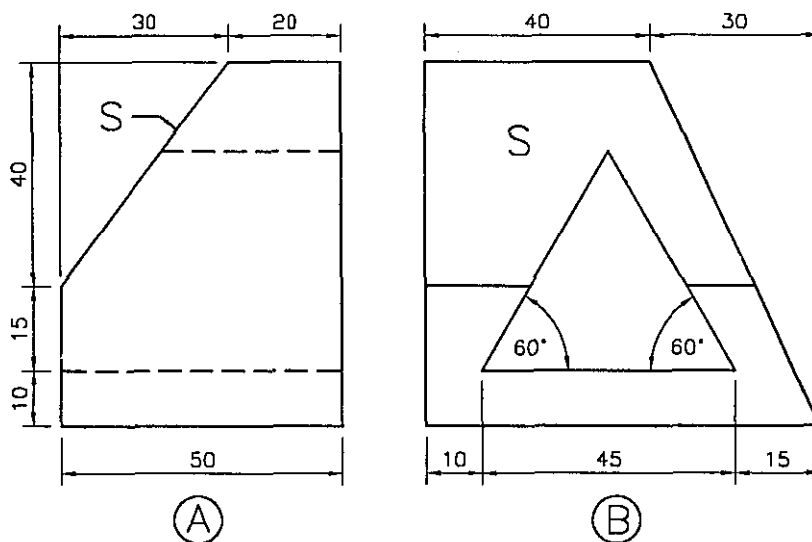


FIG. 1

2. Fig. 2 shows a quadrilateral ABCD in which the triangles ABC and ACD are equal in area. The triangle ABC has a perimeter of 250 mm.

- (a) Draw the quadrilateral ABCD showing clearly how the points B and D are obtained.
- (b) Draw a square which shall have 1.4 times the area of the quadrilateral ABCD.

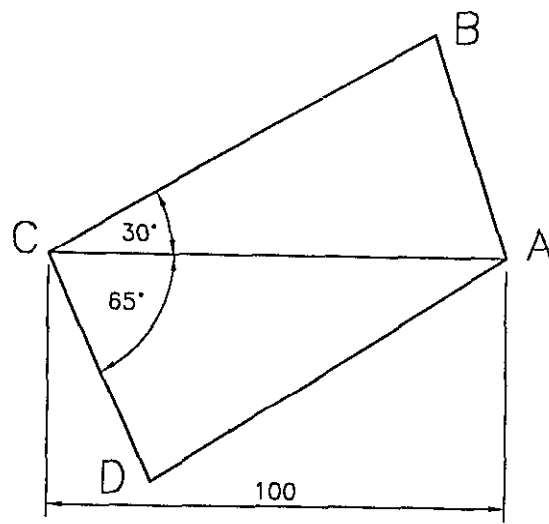


FIG. 2

3. Fig. 3 shows the plan and elevation of a cone which has been cut as shown. Also shown is the plan of a sphere which rests on the horizontal plane and is in contact with the cut cone.

- (a) Draw the given projections and complete the elevation showing the sphere in position.
- (b) Draw the plan and elevation of another sphere which shall rest on the horizontal plane and touch the cut cone at the point P.

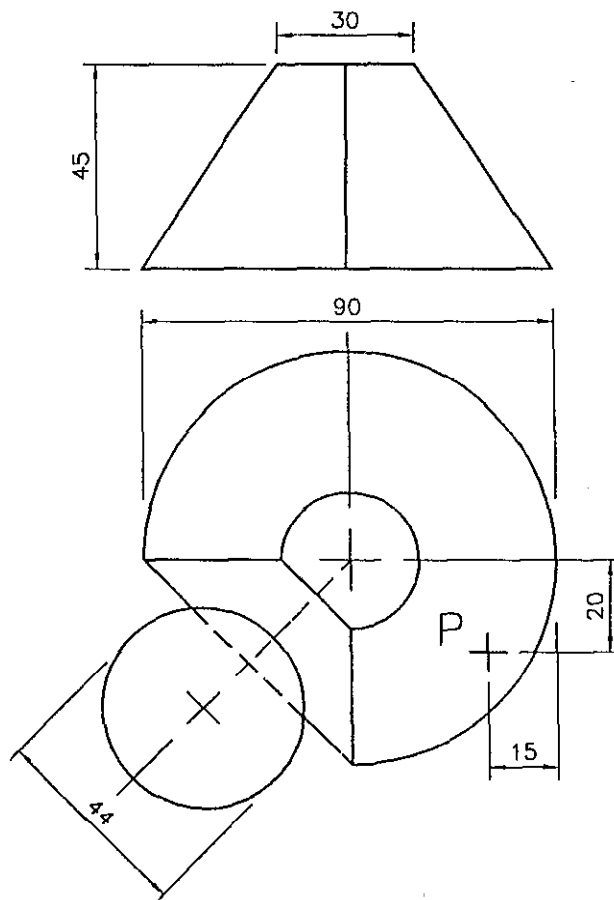


FIG. 3

4. Fig. 4 shows the plan and elevation of a cylinder. Also shown in the views is a label which is to be wrapped around the cylinder. Draw the given projections and complete the elevation to show the wrapped label in position.

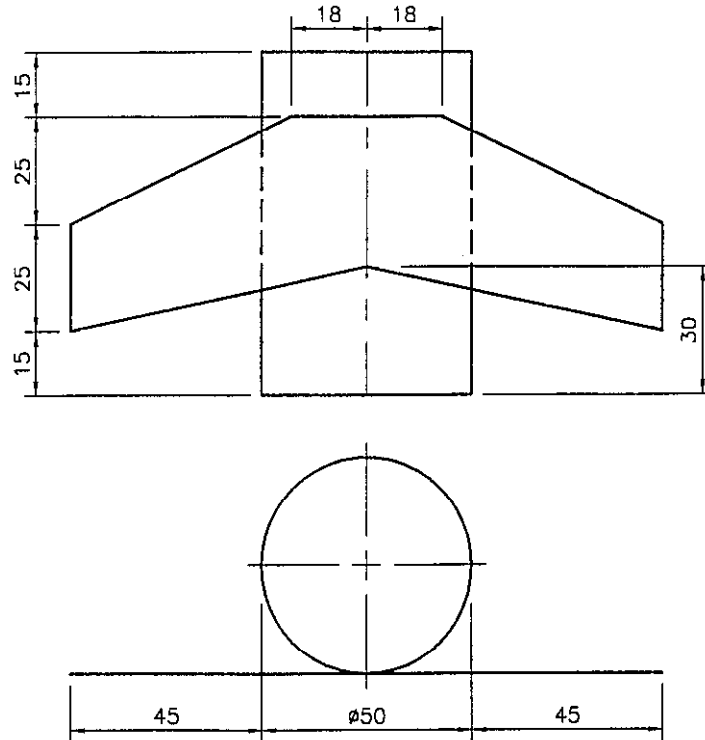


FIG. 4

5. The elevation and plan of a solid which is to be cut by the oblique plane VTH are shown in Fig. 5.
- Draw the plan and elevation of the solid when it is cut by the oblique plane VTH.
 - Draw the true shape of the cut surface of the solid.

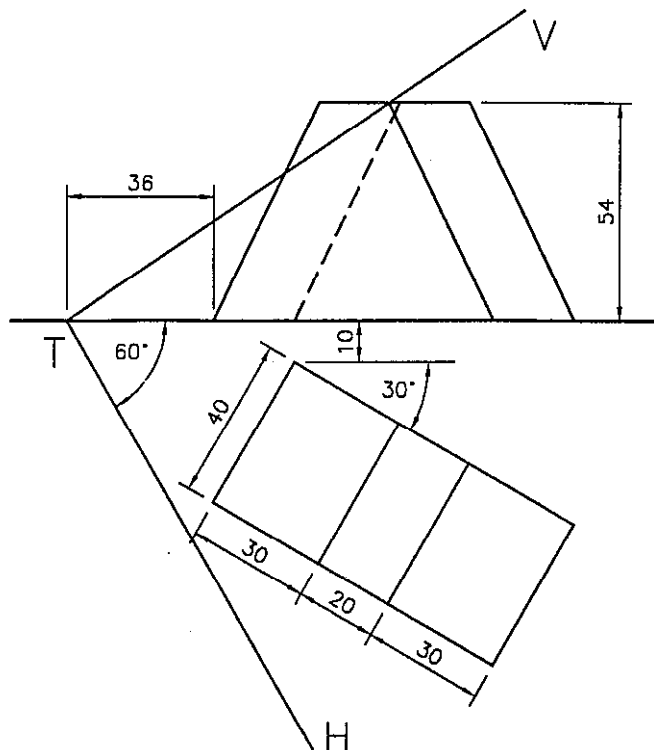


FIG. 5

6. (a) In an ellipse the distance from the focus to the vertex is 25 mm and the eccentricity is 0.5.

Draw the ellipse.

- (b) In Fig. 6 the line AB is the axis of a parabola, DD is the directrix and P is a point on the curve. Show how the position of the focus F is determined and draw a portion of the curve.

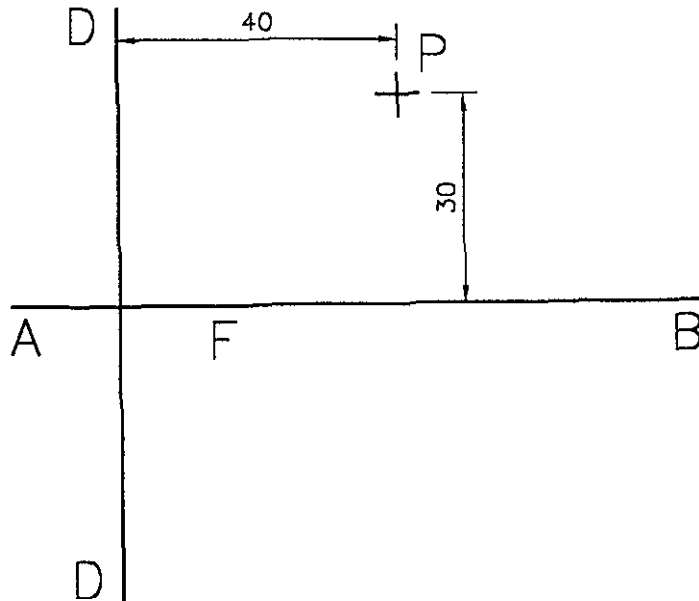


FIG. 6

7. Fig. 7 shows the incomplete elevation and the end-view of a square-based pyramid and an equilateral triangular prism of 45 mm side, which intersect each other.

Draw the plan, elevation and end-view of the solids showing all lines of interpenetration.

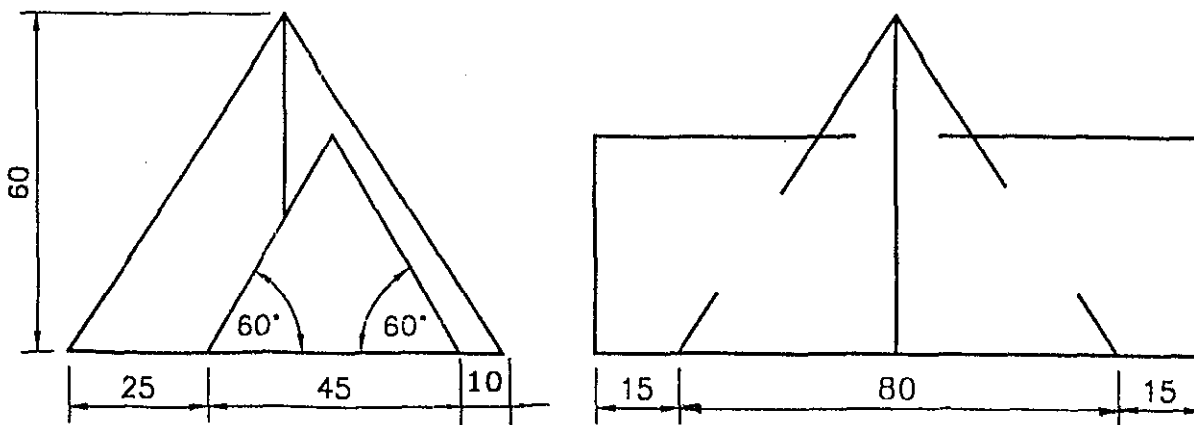


FIG. 7