

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

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. An isometric view of a shaped solid is shown in Fig. 1.

- (a) Draw an elevation of the solid looking in the direction of the arrow and project a plan.
- (b) Project a new plan of the solid which will show the true shape of surface A.

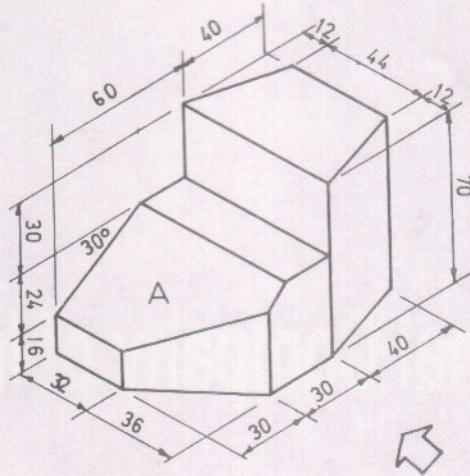


Fig. 1

2. (a) A line 75 mm long represents a distance of 280 mm on a drawing. Construct a diagonal scale to this representation to show millimetres and to read up to 500 mm.
- (b) Using the above scale for all measurements draw the irregular pentagon ABCDE shown in Fig. 2.
- (c) Draw a square which will have 1.3 times the area of pentagon ABCDE.

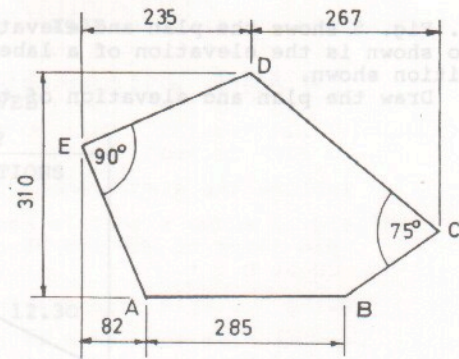


Fig. 2

3. Fig. 3 shows the plan of a cylinder A, cone B (altitude 80 mm) and sphere C resting on the horizontal plane and in contact with one another. Draw the end view, plan and elevation of the solids in contact.

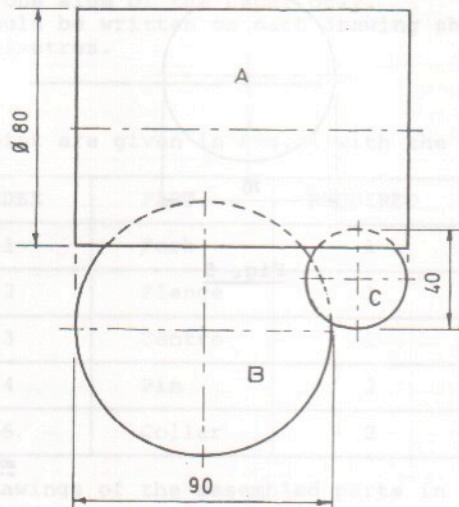


Fig. 3

4. Fig. 4 shows the plan and elevation of a regular hexagonal prism lying on the horizontal plane. Each side of the hexagon is 30 mm long and the length of the prism is 100 mm. The prism is cut by the oblique plane VTH.

- (a) Draw the plan and elevation of the cut solid.
- (b) Show the true shape of the section of the solid.

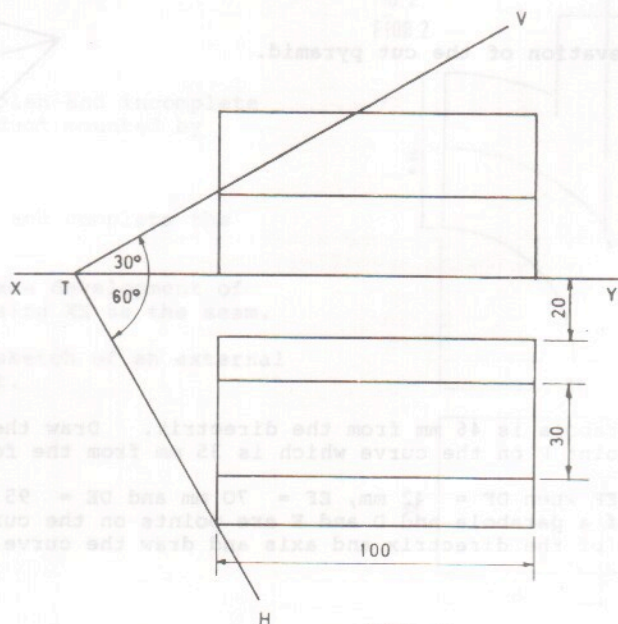


Fig. 4

5. Fig. 5 shows the plan and elevation of a cylinder of diameter 70 mm and height 110 mm. Also shown is the elevation of a label which is to be wrapped around the cylinder in the position shown.

Draw the plan and elevation of the cylinder showing the wrapped label in position.

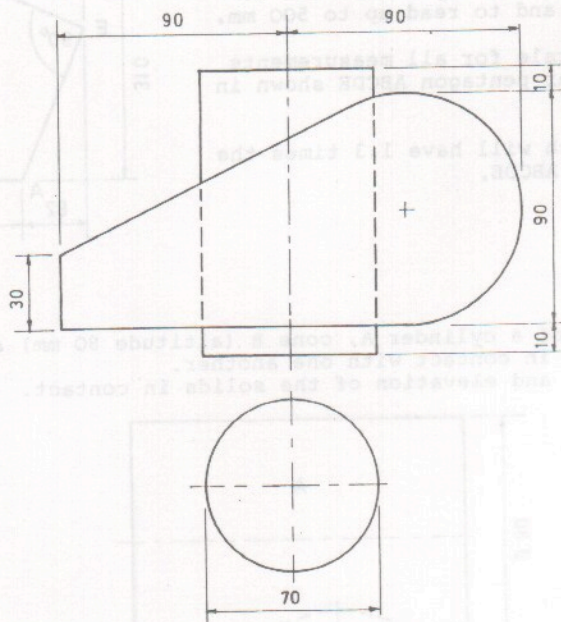


Fig. 5

6. The elevation and incomplete plan of a cut equilateral triangular pyramid are given in Fig. 6.

- Draw the elevation and complete the plan of the cut pyramid.
- Project an end elevation of the cut pyramid.

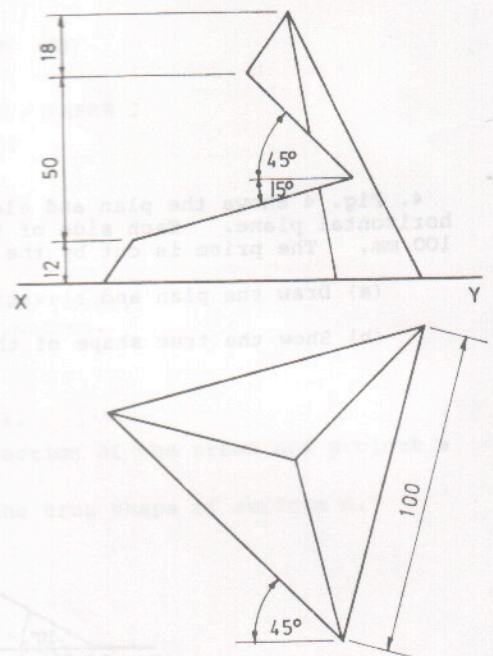


Fig. 6

- The focus of a parabola is 46 mm from the directrix. Draw the curve and construct a tangent at a point P on the curve which is 35 mm from the focus.
  - Draw a triangle DEF when  $DF = 42$  mm,  $EF = 70$  mm and  $DE = 95$  mm. In this triangle F is the focus of a parabola and D and E are points on the curve. Find the position of the directrix and axis and draw the curve.