

AN ROINN OIDEACHAIS

LEAVING CERTIFICATE EXAMINATION, 1972

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

WEDNESDAY, 14th JUNE - AFTERNOON, 2.30 to 5

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) Candidates working in metric units should write the letter "M" distinctly beside the number of the question on the answer paper.
- (f) All dimensions on the question paper are given in millimetres, with inches in parenthesis.

1. Fig. 1 shows the elevation of a hemisphere, a cylinder 80 mm ($3\frac{1}{4}$ in.) long and a cone. Each of these solids touches the vertical plane. Draw the plan of this group and from the plan project a new elevation on X_1Y_1 . Scale full size.

2. Fig. 2 shows the traces, VTH and $V_1T_1H_1$, of two intersecting oblique planes. Draw the traces and show the plan and elevation of the line of intersection of the two planes. A right hexagonal prism rests on the horizontal plane as shown and penetrates one of the oblique planes. Show the elevation of the intersection of the prism and the oblique plane. Scale full size.

3. A cam which rotates about the point O has a knife-edged follower as shown in Fig.3. During one-third of a clockwise revolution of the cam the follower is lifted from A to B at a uniform speed; during the next one-third of a revolution the follower remains stationary and during the remaining one-third of a revolution it falls uniformly from B to A. Draw the profile of the cam to a scale of full size.

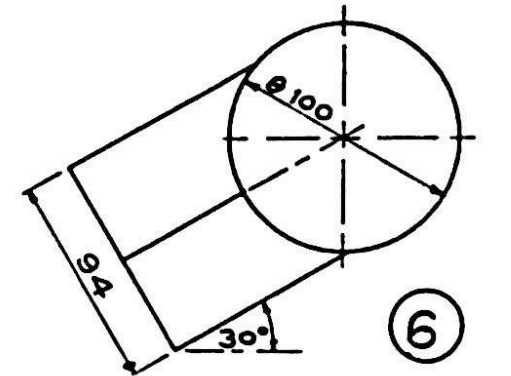
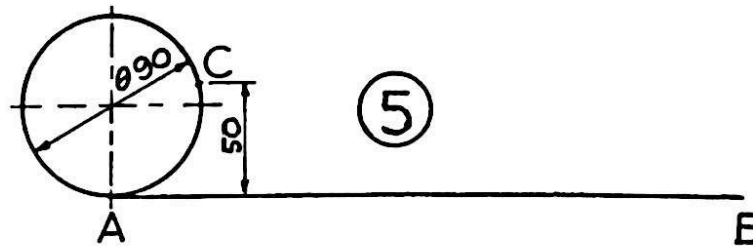
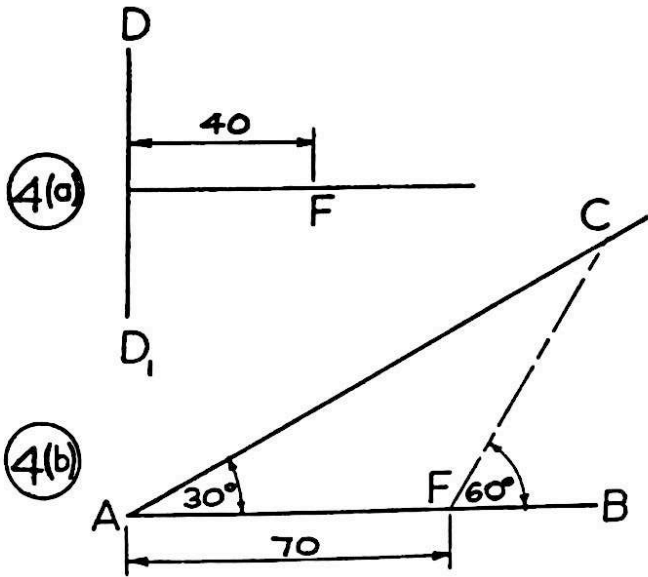
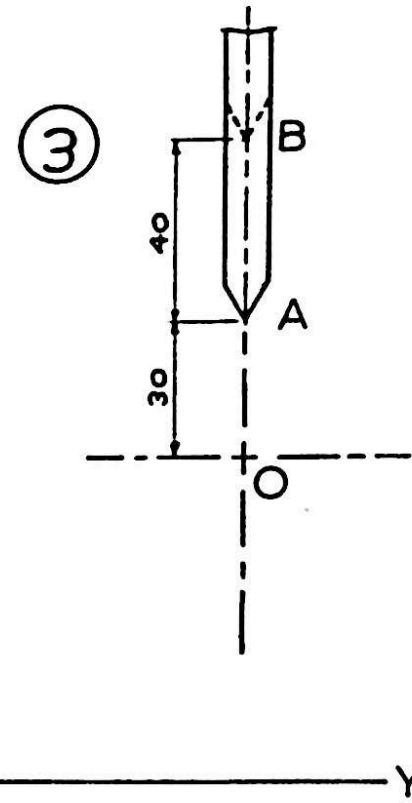
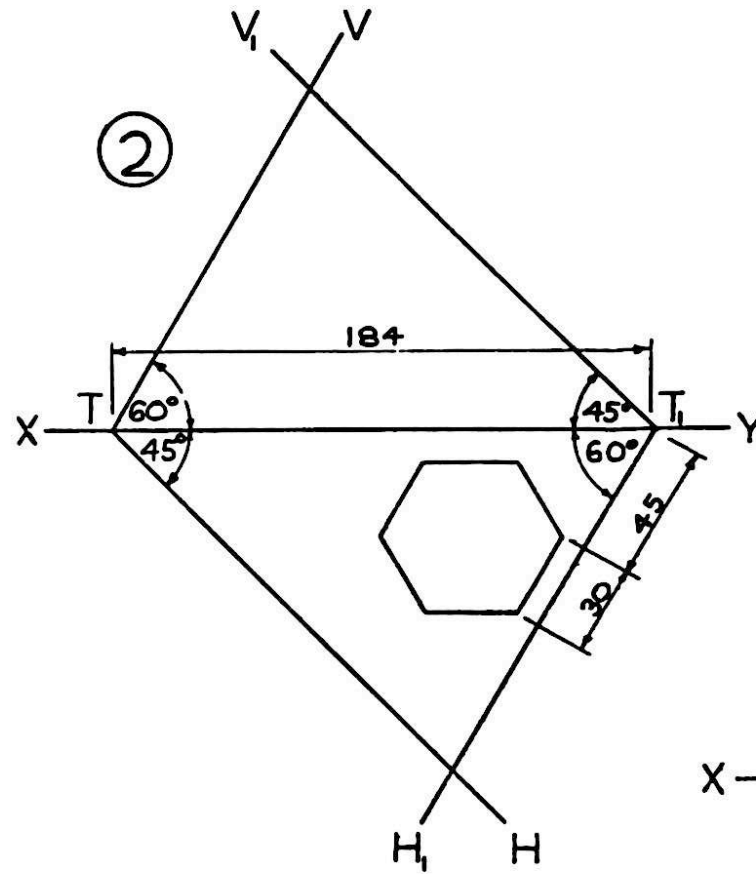
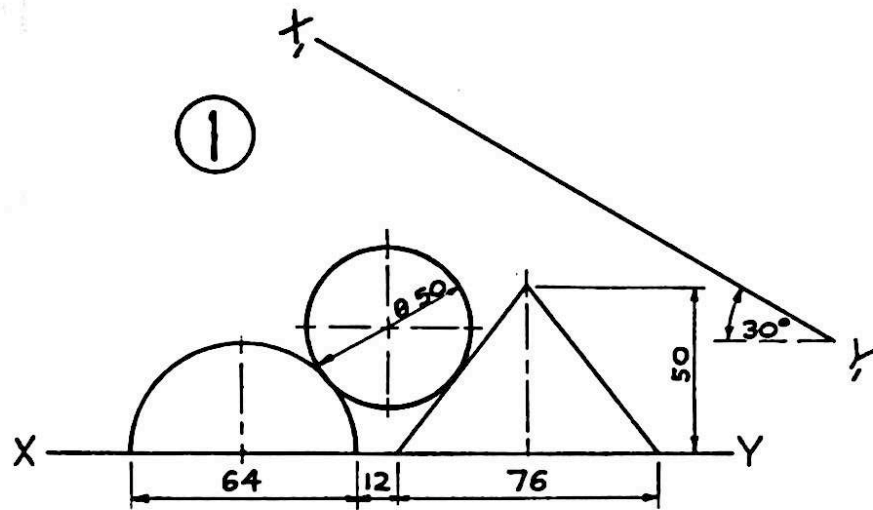
4. Fig. 4(a) shows the focus F and the directrix DD_1 of an ellipse whose eccentricity is $\frac{2}{3}$. Draw the ellipse. Scale full size.

Fig. 4(b) shows the axis line AB and the focus F of a parabola. The line AC is a tangent to the curve and touches the parabola at the point C. Draw the parabola. Scale full size.

5. Fig. 5 shows a circle which rolls, without slipping, along the line AB. Trace the locus of the point C as the circle makes one complete revolution. Scale full size.

6. Fig. 6 shows the plan of a prism which penetrates a cylinder. The cross-section of the prism is an equilateral triangle of 94 mm ($3\frac{3}{4}$ in.) side and the height of the cylinder is 100 mm (4 in.). Both solids rest on the horizontal plane. Draw a full-size plan of the solids and project an elevation on XY showing the lines of interpenetration.

Cuid I Plánchẽmseata agus Dírthchẽmseata
Part I Plane and Solid Geometry



Na toisí go léir i milliméadar
All dimensions are in millimetres

Tá na toisí in orlaí ar an taobh eile
Dimensions in inches on the reverse side