

LEAVING CERTIFICATE EXAMINATION, 1971

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

TUESDAY, 22nd JUNE - Morning, 9.50 to 12

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. The focus F and the directrix DD' of a parabola are given in Fig. 1. The position of a point P on the axis is also shown.
 (a) Construct the parabola to the given dimensions and erect a perpendicular to the line of the axis at point P .
 (b) Draw a tangent to the parabola at the point where the perpendicular line meets the curve.
2. In Fig. 2, the bars RH and AH are hinged at H and RH is pivoted at R . Draw the locus of the point P as the end of the bar AH moves from A to B .
 Scale: full size
3. The incomplete plan and elevation in Fig. 3 shows the projections of a hemisphere penetrated vertically by a cylinder and horizontally by a square prism. Complete the plan and elevation to the given dimensions showing clearly the lines of intersection.
4. The traces of two oblique planes $V.T.H$ and $V'.T'.H'$ are shown in Fig. 4. Draw the traces to the given dimensions and show:-
 (a) the projections of the line of intersection,
 (b) the true length of the line of intersection, and
 (c) the angle between the planes.
5. The projections of a pentagonal pyramid are shown at Fig. 5. The pyramid is cut by the inclined planes AB and BC . Develop the surfaces of the pyramid below the cutting planes and draw the true shape of the cut surfaces.
6. The elevation of a cylinder is shown at Fig. 6. Two lines are scribed about the surface of the cylinder rising uniformly from points A^1B^1 to points AB in one complete revolution. To the given dimensions draw the elevation of the cylinder showing the two lines in position.
7. The diameters of three spheres A, B and C , are 70, 50 and 40 millimetres ($2\frac{3}{4}$, 2 and $1\frac{5}{8}$ inches), respectively. Draw full size the plan of the three spheres having A and B in contact with each other and with the vertical and horizontal planes, and having C in contact with A and B and with the vertical plane.

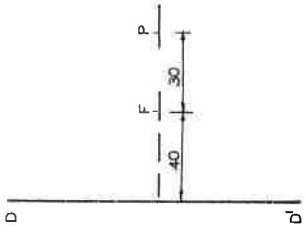
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Piánáilmeáire agus Dúthchéimseáire
Plane and Solid Geometry

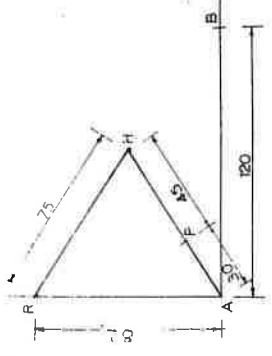
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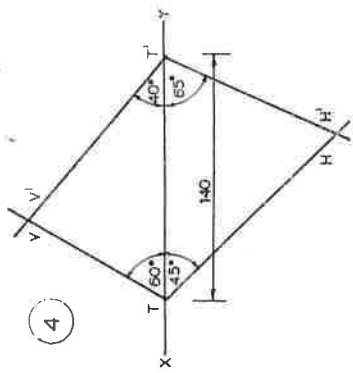
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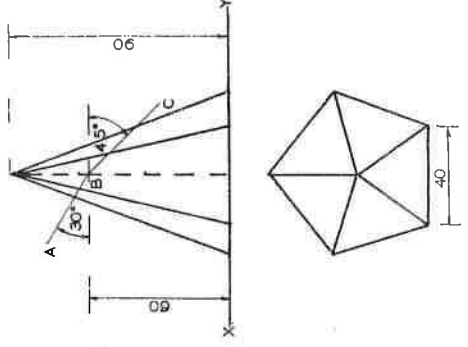
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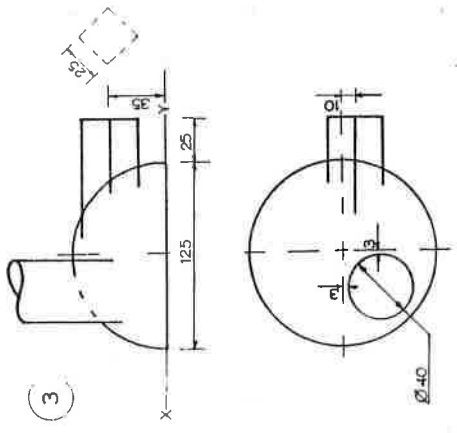
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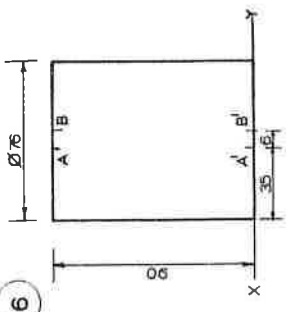
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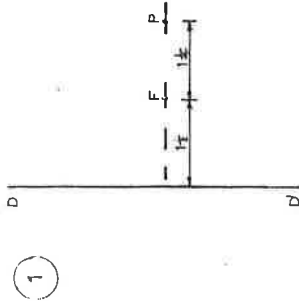


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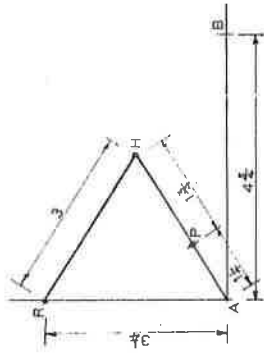


Ná tósaí go léir i míliméadar
All dimensions are in millimetres

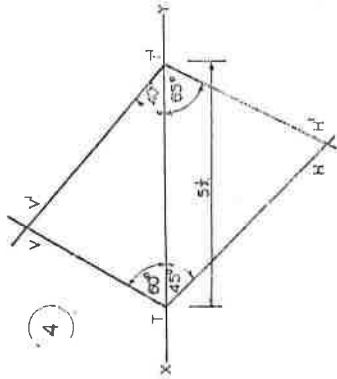
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Dimensions in inches on the reverse side



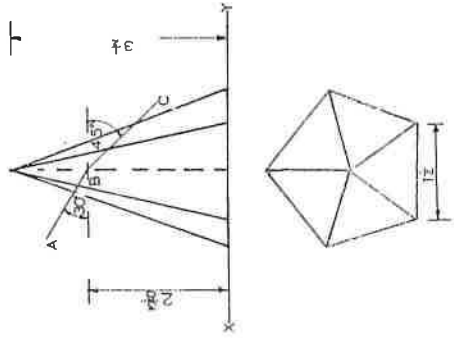
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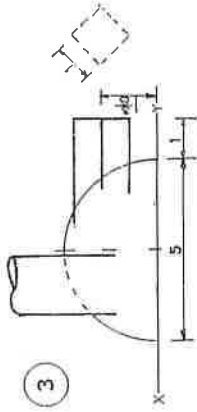
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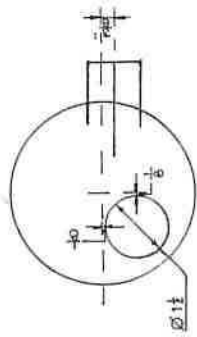
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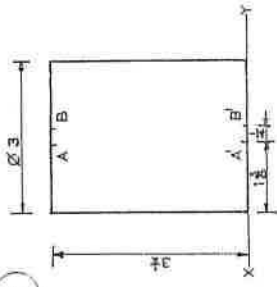
(5)



(3)



(6)



Na toisí go léir in. cúbil.
All dimensions are in inches.

Ta na toisí i milliméadar ar an taobh eile.
Dimensions in millimetres on the reverse side.