

## INTERMEDIATE CERTIFICATE EXAMINATION, 1978

## MECHANICAL DRAWING

THURSDAY 15 JUNE - AFTERNOON, 2.00 to 5.00

400 marks

## INSTRUCTIONS

- (a) Five questions to be answered; one of these must be question No. 1, Section A. Two must be selected from Section B and two must be selected from Section C.
- (b) All questions carry equal marks. A maximum of 12 marks will be awarded for draughtsmanship in respect of each question and a maximum of 20 marks will be awarded for neatness, arrangement and presentation of answer sheets.
- (c) The number of the question must be distinctly marked by the side of each question.
- (d) Work on one side of the paper only.
- (e) Examination number must be distinctly marked on each sheet of paper used.
- (f) All construction lines must be clearly shown.
- (g) All measurements are in millimetres.

## SECTION A

(This question must be attempted)

1. A shaped solid is shown in fig. 1. Make a full-size orthographic projection of the solid showing:-
  - (a) an elevation looking in the direction of arrow A,
  - (b) an end-view looking in the direction of arrow B,
  - (c) a plan projected from (a).

## SECTION B

(Two questions to be attempted from this section)

2. The elevation and plan of a shaped solid are shown in fig. 2.
  - (a) Draw full size the elevation and plan and project a new elevation onto the X,Y, line.
  - (b) Take any four corners on the solid and index them on all three views.
3. (a) The elevation, plan and end elevation of a shaped solid are given in fig. 3. Draw full-size, either an oblique or isometric view of the solid.
 

OR

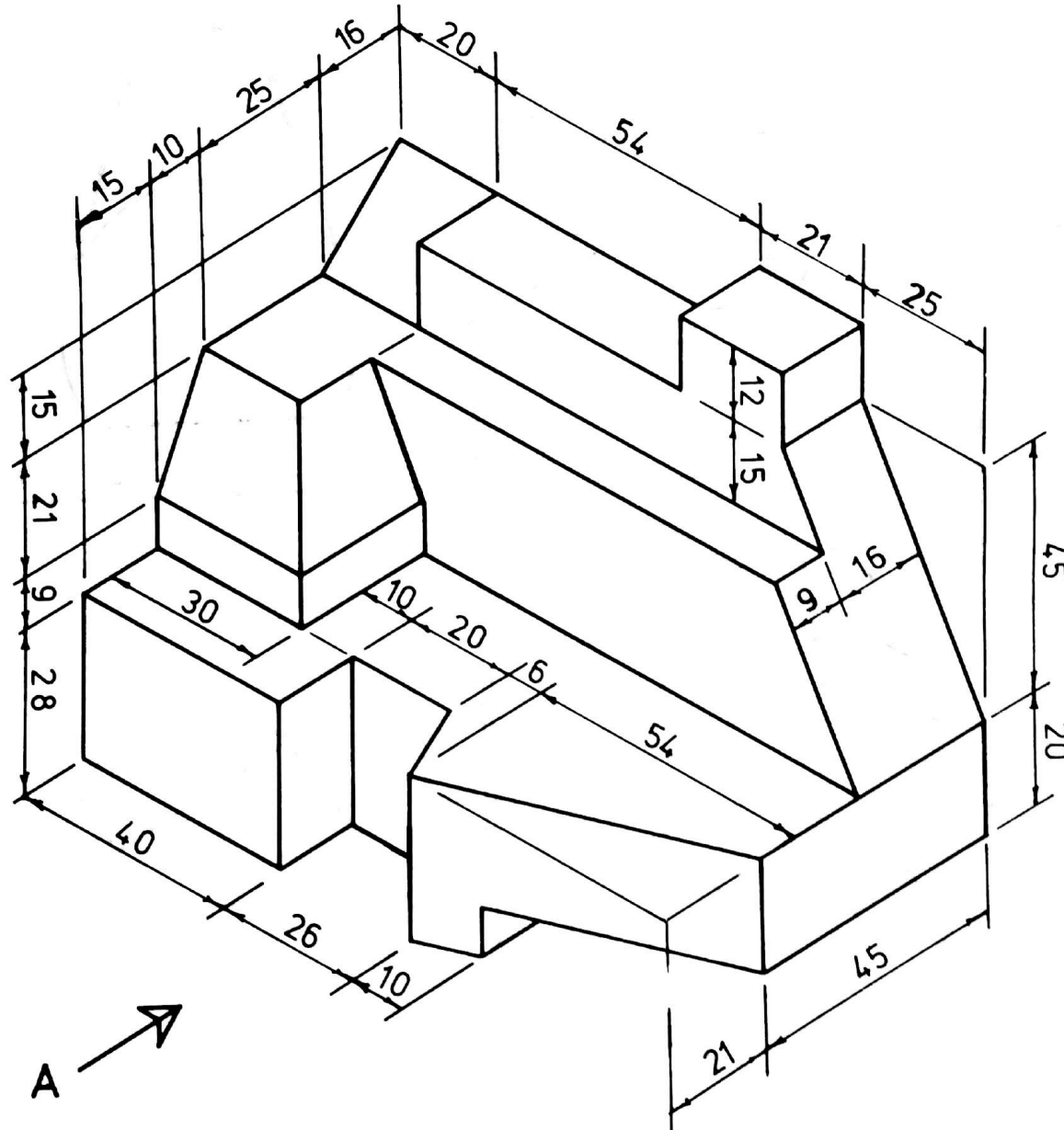
 (b) Using the isometric grid paper provided, make a neat well-proportioned FREEHAND sketch of the solid shown in fig. 3. Insert all necessary dimensions on the sketch.
4. Draw a full size development of all the surfaces of the solid shown in elevation and end view in fig. 4.
5. The elevation and incomplete plan of the frustum of a regular pentagonal pyramid, cut by an inclined plane, are given in fig. 5. Draw the elevation and complete the plan of the cut solid.

## SECTION C

(Two questions to be attempted from this section)

6. Reproduce, full size, the design shown in fig. 6. All construction lines and points of contact must be clearly shown.
7. The quadrilateral shown in fig. 7 represents the outline of a steel plate. Draw this plate full size. The plate is rotated in a clockwise direction about the point P until the point N meets the line L-L. Draw the plate in its new position.
8. Two similar triangles ABC and BCD are shown in fig. 8.
  - (a) Draw these two triangles full size.
  - (b) Construct a square which will be equal in area to the quadrilateral ABDC.
9. The design shown in fig. 9 is made up of a semi-ellipse and half a regular octagon. The focal points of the ellipse are indicated in the figure. Draw, full size, this design showing clearly all construction lines.

ROINN A — SECTION A



1.

THALL OVER } →

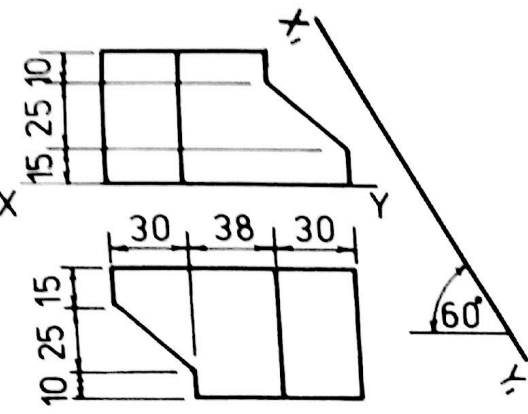
A →

← B

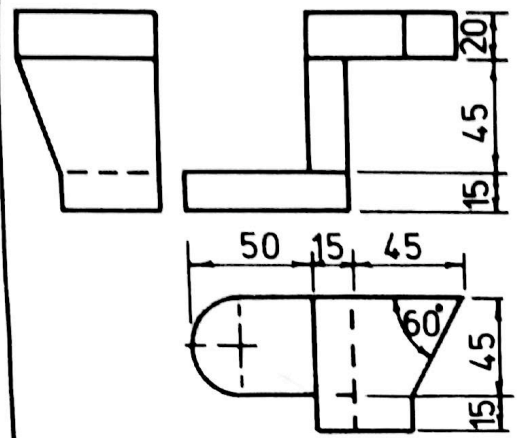
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ROINN B — SECTION B

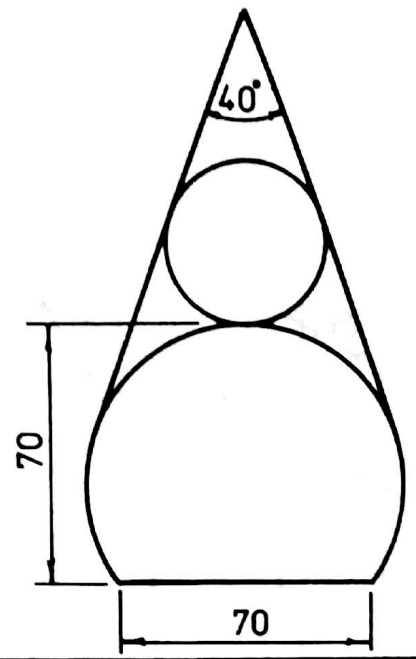
ROINN C — SECTION C



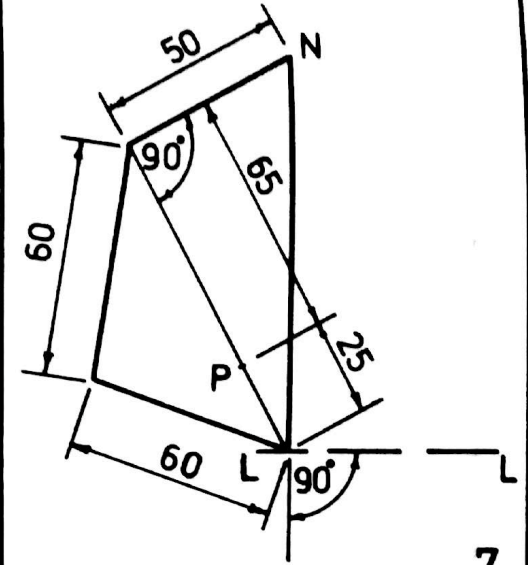
2.



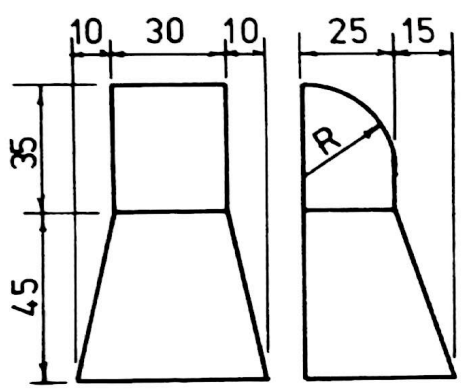
3.



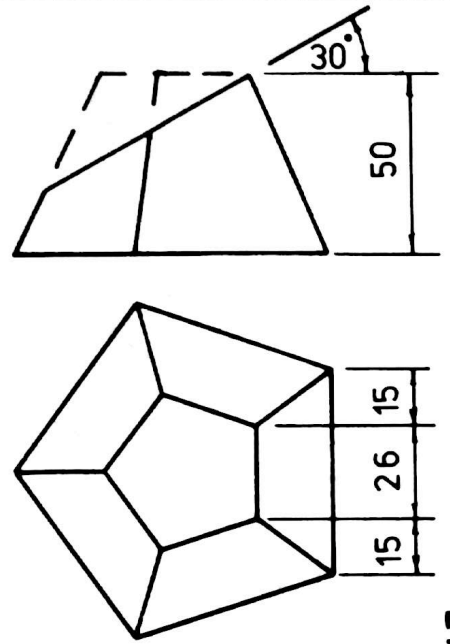
6.



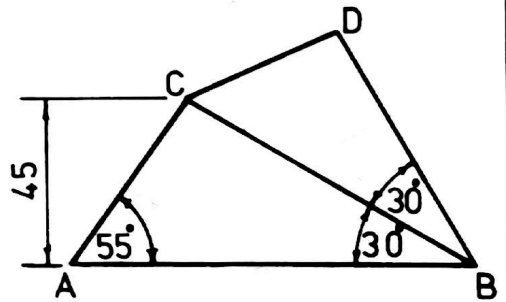
7.



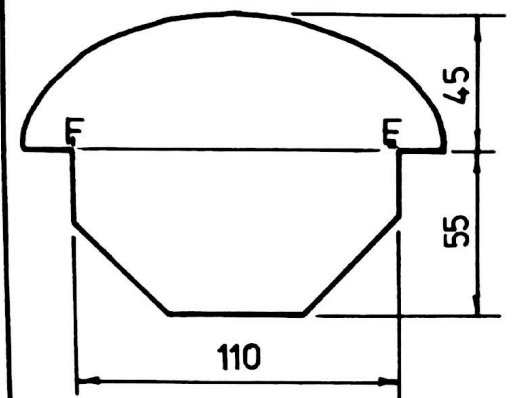
4.



5.



8.



9.