INTERMEDIATE CERTIFICATE EXAMINATION, 1970

MECHANICAL DRAWING

TUESDAY, 23rd JUNE — AFTERNOON, 2 to 5

400 marks

INSTRUCTIONS

(a) Not more than *five* questions may be attempted; *one* of these must be *Question No. 1, Part I. Two* must be selected from *Section A, Part II,* and *two* must be selected from *Section B, Part II.*

(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 answer.

(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.

PART I

(This question must be attempted)

1. Figure 1 represents a solid. Make a full size drawing of the solid, showing:—
   (a) an elevation looking in the direction of arrow *X*,
   (b) an end elevation looking in the direction of arrow *Y*,
   (c) a plan view projected from (a).
   Insert five main dimensions.

PART II

SECTION A

(Answer *two* questions from this Section)

2. Figure 2 shows the elevation and incomplete plan of a square-based pyramid, which has its base inclined at 45° to the horizontal plane.
   (a) Reproduce the elevation full-size and draw the complete plan.
   (b) Draw an auxiliary elevation on the new ground line X_1 Y_1. The new ground line is drawn perpendicular to the direction of the arrow *A*.
   Index the points in each view.

3. Figure 3 shows the plan and elevation of a container which is closed both top and bottom. Draw full size, and in one piece, the development of all the surfaces.

4. The elevation and plan of a solid are shown in Figure 4. Draw full size an isometric view of the solid,

OR

Using the isometric grid paper provided, make a neat, well-proportioned, freehand drawing of the solid.

5. Figure 5 shows the elevation of a shaped metal plate which is $\frac{1}{2}''$ (or 13 mm) thick. Reproduce the given elevation and draw a plan and end elevation full size.

PART II

SECTION B

(Answer *two* questions from this Section)

6. A cross-section of a moulding is given in Figure 6. Copy the figure full size to the dimensions given and then construct a figure similar to this, but having an overall height of 3 inches (or 75 mm).

7. Figure 7 shows three circles, *A*, *B*, and *C*, which touch each other externally. The diameters of circles *A* and *B* are indicated and the circle *C* is to have an area equal to the sum of the areas of the other two.
   Draw the figure full size showing all construction lines.

8. Figure 8 represents a line $4\frac{3}{16}''$ (or 106 mm) long which is the major axis of an ellipse. The points F^1 and F^2 are the focal points and are positioned one seventh of the total length from the ends of the major axis.
   Construct the ellipse using either the "concentric circles" or the "intersecting lines" method. All construction lines must be clearly shown.

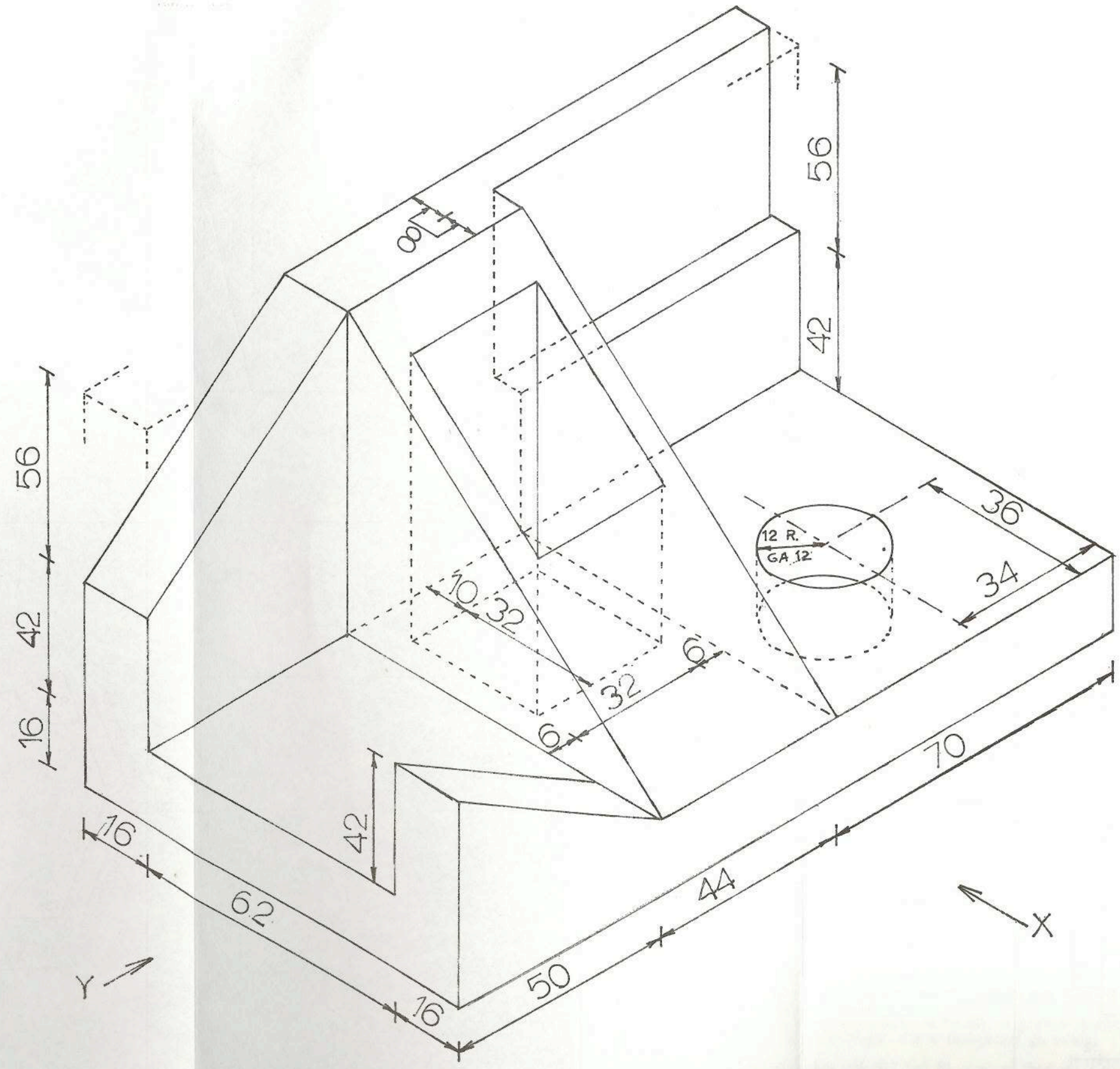
9. A line $3\frac{1}{4}''$ (or 81 mm) long represents 2 yds. 2 ft. (or 2 metres, 4 decimetres). Construct a diagonal scale, showing yards, feet and inches (or metres, decimetres and centimetres) to read up to 4 yds. (or 4 metres).
   Using this scale draw the shape shown at Figure 9 to the dimensions given.
   Correct geometrical constructions are to be used, and shown, for finding points of contact. etc.

SCRÚDÚ NA MEÁNTEISTIMÉIREACHTA 1970. INTERMEDIATE CERTIFICATE EXAMINATION.

LÍNÍOCHT MHEICNIÚIL, CUID I. MECHANICAL DRAWING PART I.

FÍOR 1.

FIGURE 1.



Tá na toisí sa chóras méadrach.

The measurements are in the metric system.

CUID 2 - PART 2.

Tá na toisí sa chóras méadrach.

The measurements are in the metric system.

ROINN A. - SECTION A.

FIGURE 2.
FÍOR 2.

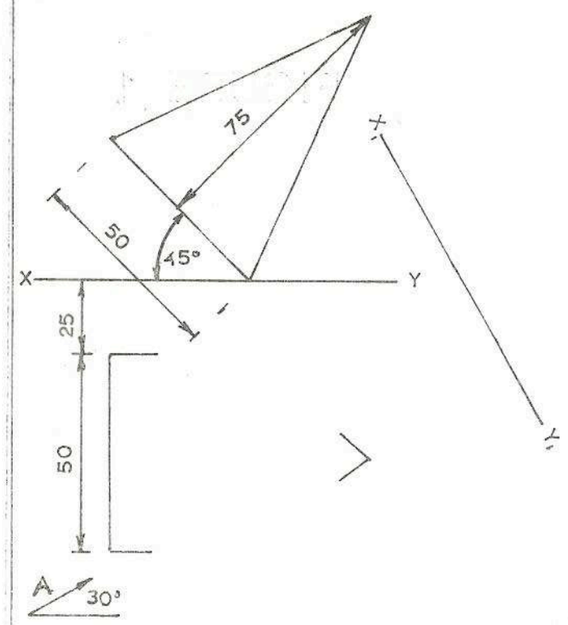


FIGURE 3.
FÍOR 3.

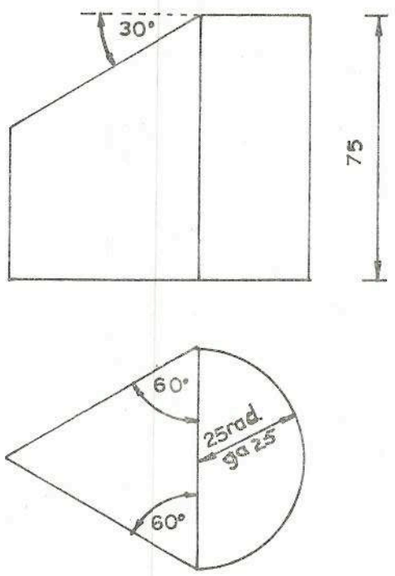


FIGURE 4.
FÍOR 4.

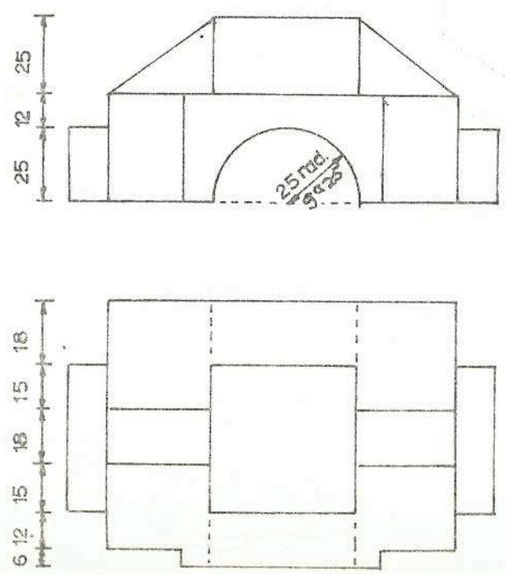
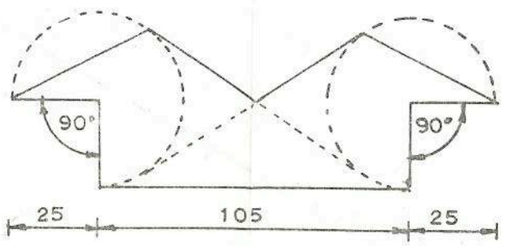


FIGURE 5.
FÍOR 5.



ROINN B. - SECTION B.

FIGURE 6.
FÍOR 6.

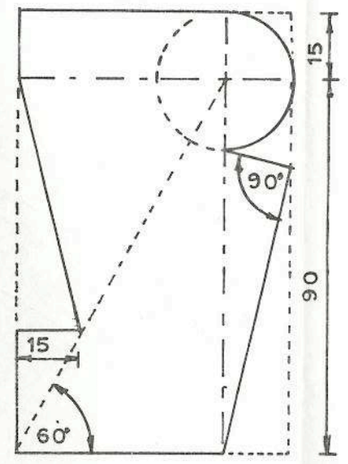


FIGURE 7.
FÍOR 7.

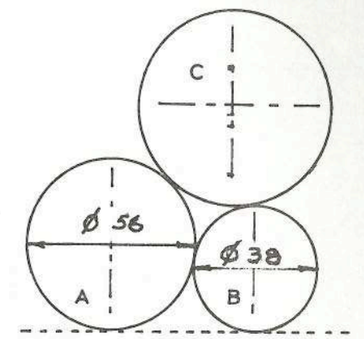


FIGURE 8.
FÍOR 8.

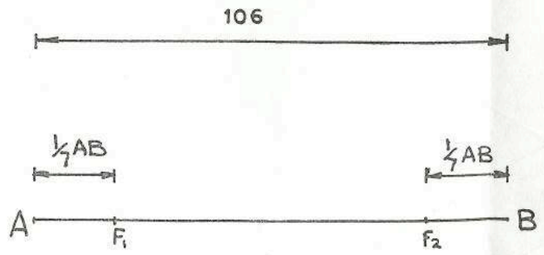
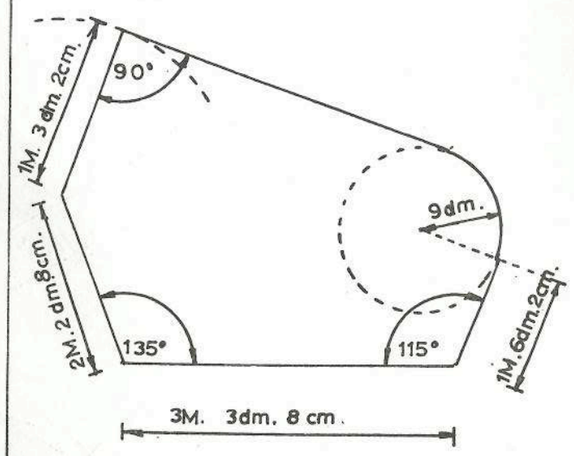



FIGURE 9.
FÍOR 9.