Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2008

Technical Drawing
Paper 1 – Ordinary Level
(Plane and Solid Geometry)
(200 Marks)

Friday 13 June
Afternoon, 2.00 - 5.00

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) Work on one side of the paper only.
(f) All dimensions on the question paper are given in metres or millimetres.
(g) 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.

(b) Project a plan from the elevation.

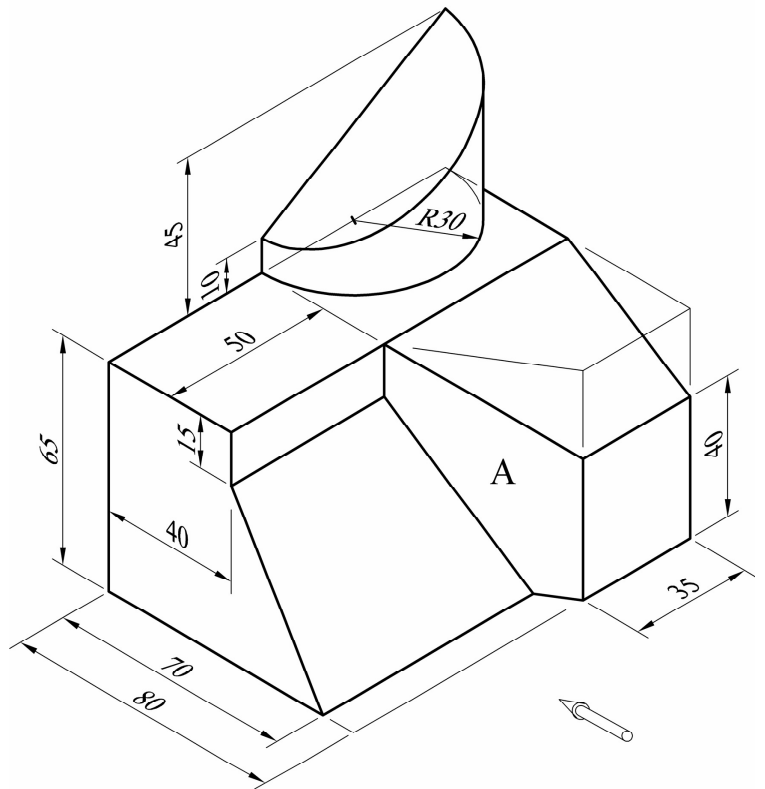**(c)** Project a new elevation of the solid from the plan, which will show the true shape of the surface A.

Fig. 1

2. Fig. 2 shows a quadrilateral ABCD which is divided into two triangles.

The sides of the triangle ACD are in a ratio of 2:4:5.

(a) Draw the given figure, showing clearly the constructions required to locate the point D.

(b) Draw a square, which shall be half the area of the figure ABCD.

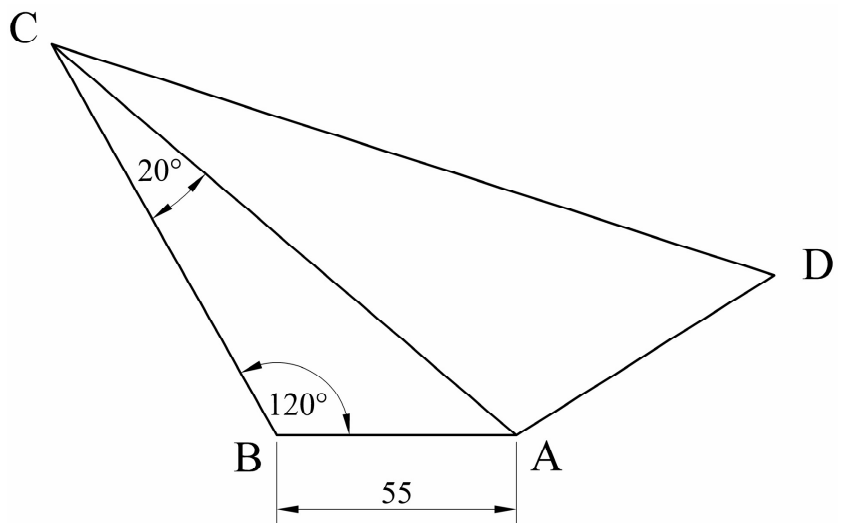***All constructions must be clearly shown on the sheet.***

Fig. 2

3. Fig. 3 shows the elevation and plan of a cone A and a sphere B with a point P on its surface. The solids are in contact with each other as shown.

The plan of a sphere C, which rests on the horizontal plane and is in contact with both solids, is also shown.

(a) Draw the elevation and plan of the cone A and the sphere B.

(b) Draw the plan and elevation of the sphere C.
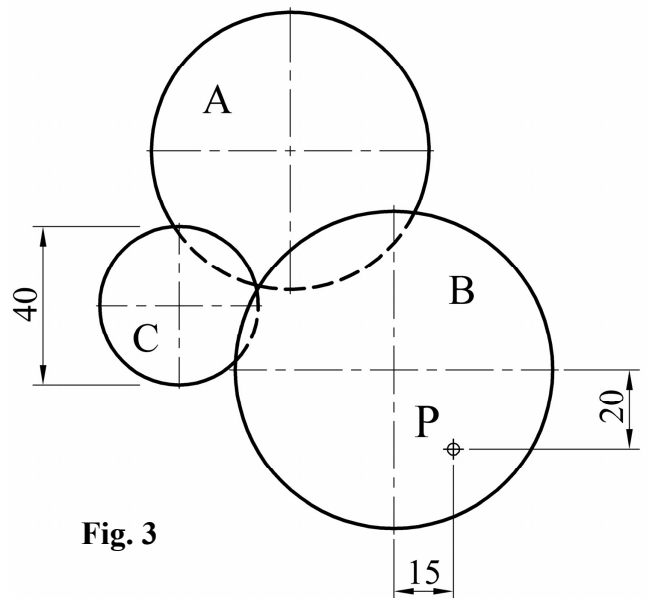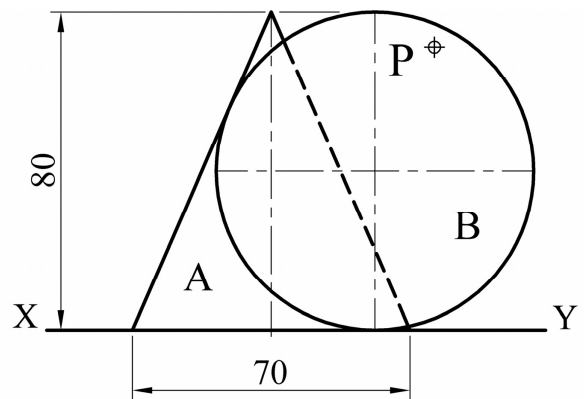
(c) Show the plan and elevation of the point P.

Fig. 3

4. Fig. 4 shows a circle C with a point P on its circumference. A portion of a circle D with a point Q on its circumference is in contact with the circle C as shown.

(a) Circle C rolls clockwise along the line AB until P reaches the line AB.

Plot the locus of P for this movement.

(b) Circle D rolls anticlockwise along the line AB until Q reaches the line AB.
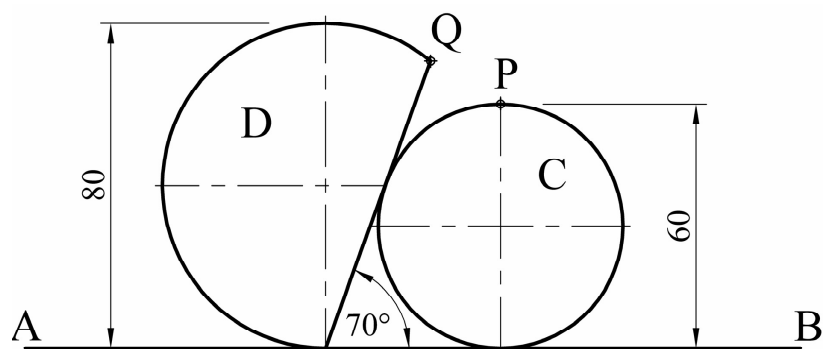
Plot the locus of Q for this movement.

Fig. 4

5. The elevation and plan of a solid, which is to be cut by an oblique plane VTH, are shown in Fig. 5.

    (a) Draw the plan and elevation of the solid when it is cut by the oblique plane VTH.

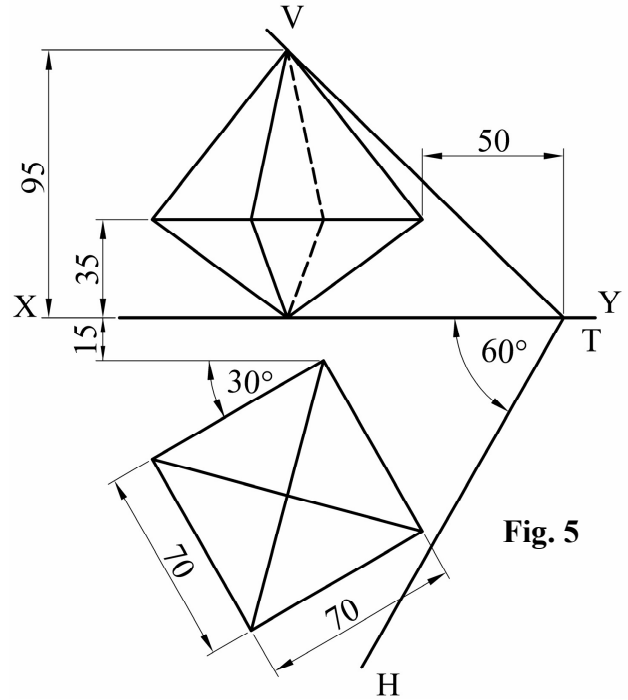   **(b)** Draw the true shape of the cut surface of the solid.

Fig. 5

6. **(a)** An ellipse has an eccentricity of 0.75. The distance from the focus to the directrix is 45mm. Draw the ellipse.

    (b) Fig. 6 shows the directrix of a parabola. The position of the axis is also shown. The position of a point P on the curve is also shown.

        Locate the focus and vertex of the parabola.

        Draw a portion of the curve which passes through the given point P.
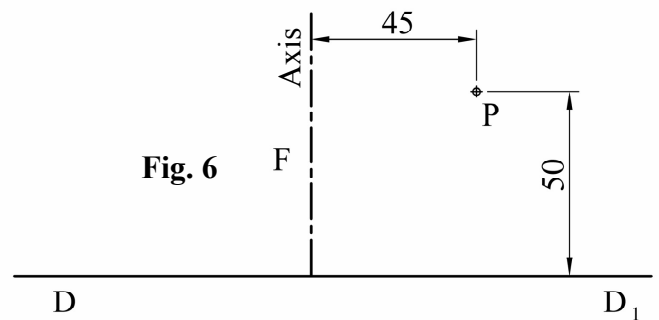
Fig. 6

7. Fig. 7 shows the plan and elevation of a rectangular based prism. It is intersected by a triangular prism.

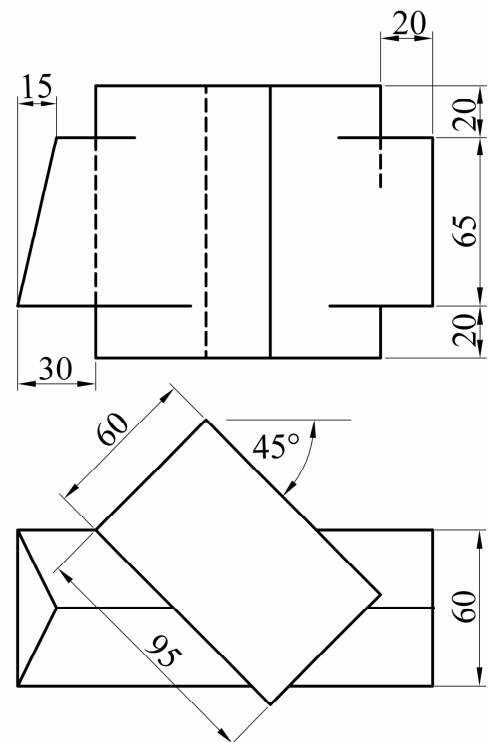Draw the plan, elevation and end elevation of the solids showing all lines of interpenetration.

Fig. 7

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