Pre-Junior Certificate Examination, 2013

Technical Graphics
Higher Level
Section B

(280 marks)

Time : 3 Hours

Instructions

(a) ***Any four*** *questions to be answered.*

(b) *All questions in this section carry equal marks.*

(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) *Write your name, your school's name and your teacher's name on each sheet of paper used.*

SECTION B. Answer any **four** questions. All questions carry equal marks.

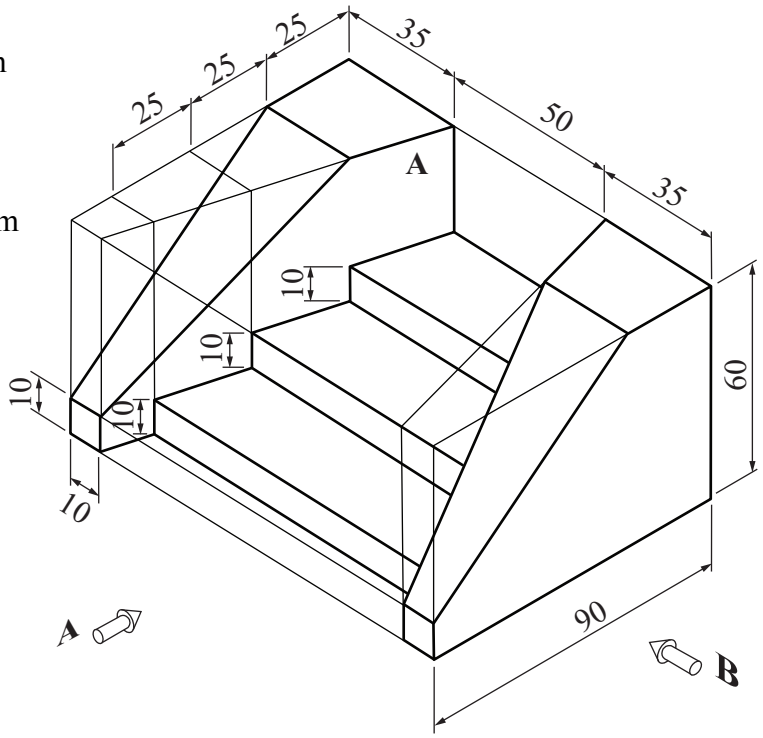
1 A pictorial view of a set of steps is shown.

(a) Draw an elevation in the direction of arrow **A**.

(b) Project a plan from the elevation.

(c) Project an end view in the direction of arrow **B**.

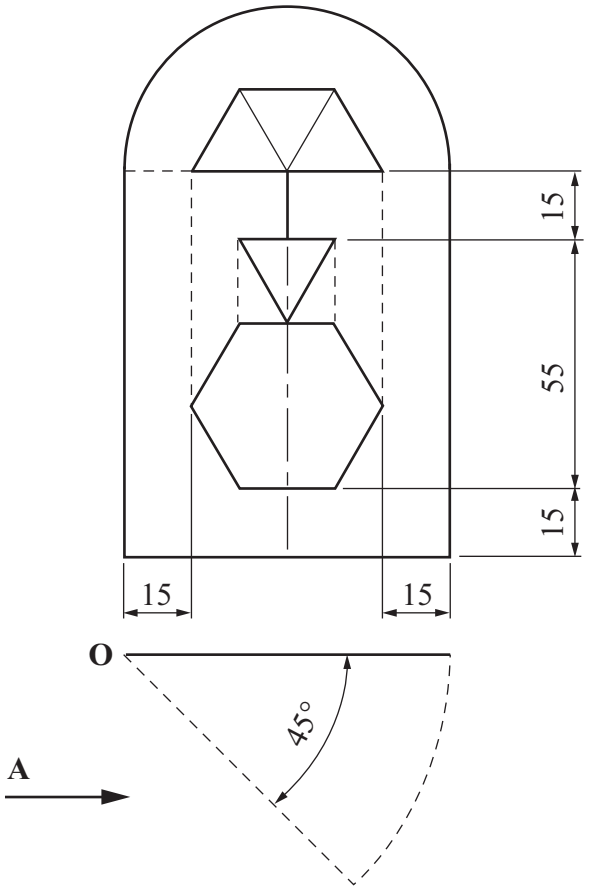
(d) Determine the true shape of the surface **A**.



2 The figure shows the elevation and plan of a garden gate. The design of the opening is based on a hexagon, an equilateral triangle and a semi-hexagon. The gate is rotated about point **O** in plan as shown by the broken line.

(a) Draw the given elevation and plan showing clearly how to determine the size of the opening.

(b) Project an end view of the garden gate in the direction of the arrow **A** to show the gate in the rotated position.



3 The axonometric axes required for the isometric projection of a trophy are shown. The front elevation and side elevation of the trophy are also shown.

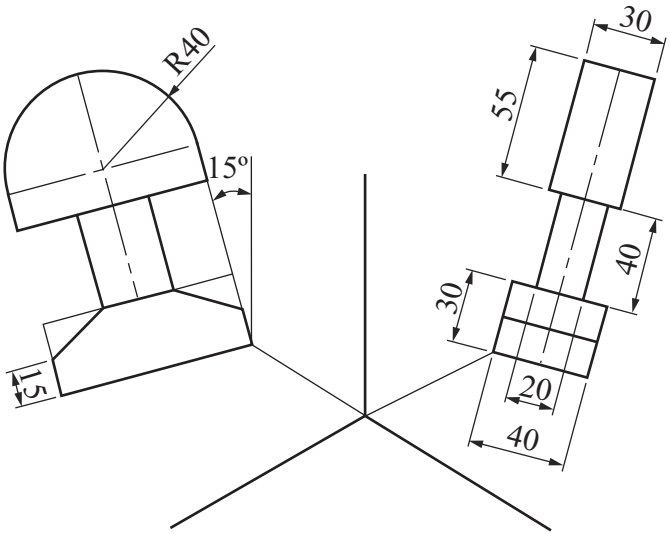
(a)

(i) Draw the axonometric axes as shown.

(ii) Draw the given front elevation orientated at 15° as shown.

(iii) Draw the given side elevation orientated at 15° as shown.

(iv) Draw the completed axonometric projection of the trophy.



OR

(b) Draw the completed isometric projection of the trophy using the isometric scale method.

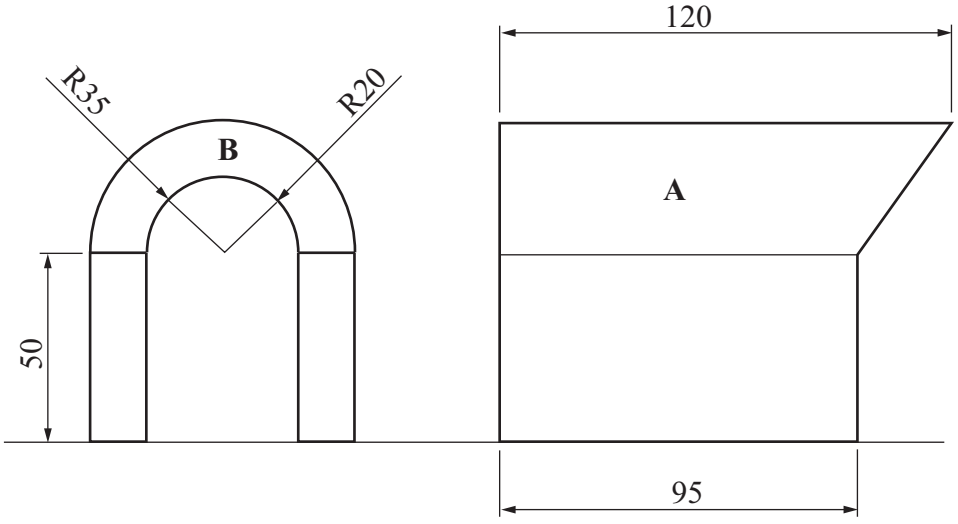
4 The figure shows the elevation and end view of a design for a dog house.

(a) Draw the given elevation and end view of the dog house.

(b) Project a plan from the elevation.

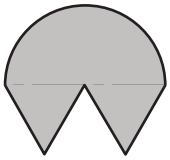
(c) Draw the development of the curved surface **A**.

(d) Draw the development of the sloping surface **B**.



5 The figure shows the logo for a balloon club. It is based on a regular hexagon. The figure is subject to transformations in the following order:

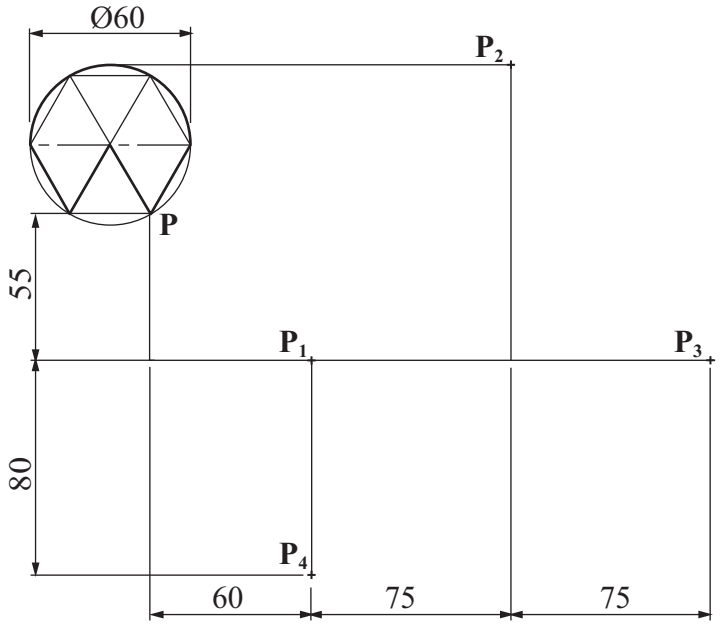
- Translation
- Central symmetry
- Axial symmetry
- Rotation clockwise through an angle of 120°.



P_1, **P_2**, **P_3** and **P_4** show the positions of point **P** under each of these transformations.

(a) Draw the given figure.

(b) Determine the image of the figure under **each** of these transformations.



6 The figure shows the design of a logo for a rugby club.

The curve **ABCD** is elliptical with focal points **F** and **F_1**.

The curve **LMN** is a parabola with the vertex at **M**.

Draw the given logo showing clearly all construction lines and points of contact.