



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination, 2012

Technical Graphics
Higher Level
Section A

(120 marks)

Monday, 18 June
Morning 9:30 - 12:30

Instructions

- (a) Answer **any ten** questions in the spaces provided.
 All questions carry equal marks.
- (b) Construction lines must be clearly shown.
- (c) All measurements are in millimetres.
- (d) This booklet must be handed up at the end of the examination.
- (e) Write your examination number in the box provided below and on all other pages used.

Examination Number:

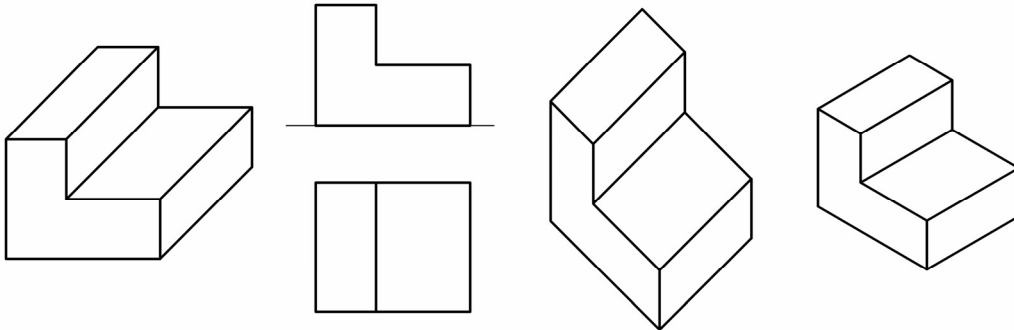
Centre Number

Question	Mark
Section A	
1	
2	
3	
4	
5	
6	
TOTAL	
GRADE	

SECTION A. Answer **any ten** questions. All questions carry equal marks.

1 Fill in the label for **each** diagram by selecting from the projections given in the list.

- Projection:
- Orthographic
 - Isometric
 - Oblique
 - Planometric

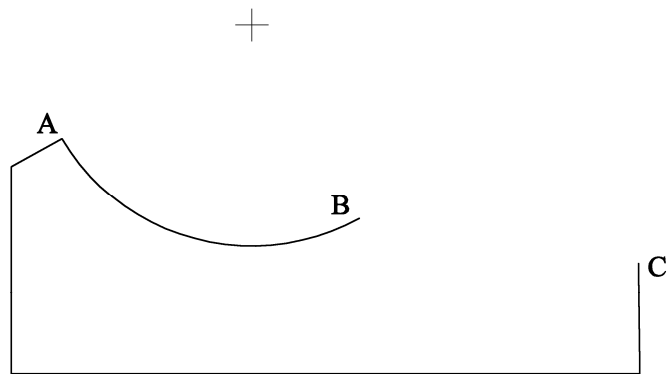
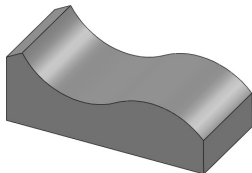


1 _____ **2** _____ **3** _____ **4** _____

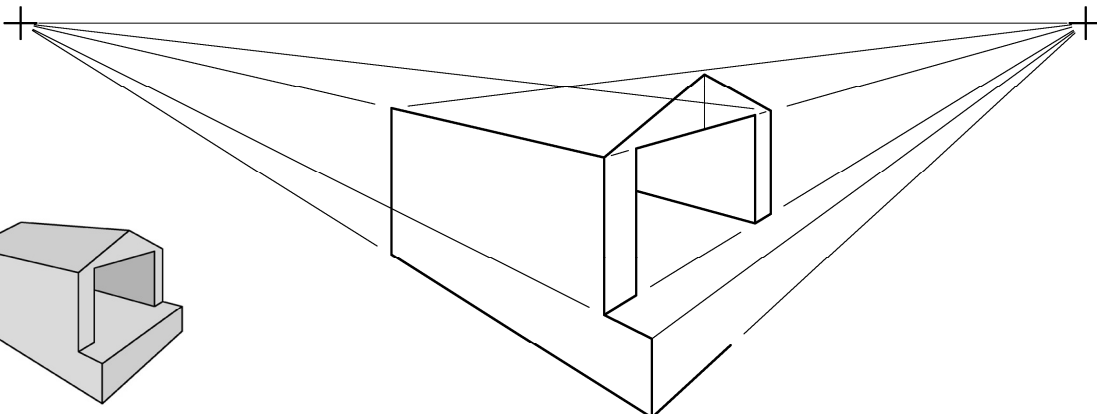
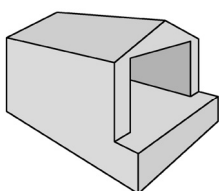
2 The incomplete elevation of a lounge chair is shown. A 3D graphic of the chair is also shown. Complete the elevation by drawing the arc **BC**.

The arc **BC** has a radius of 35 mm and is tangential to the arc **AB**.

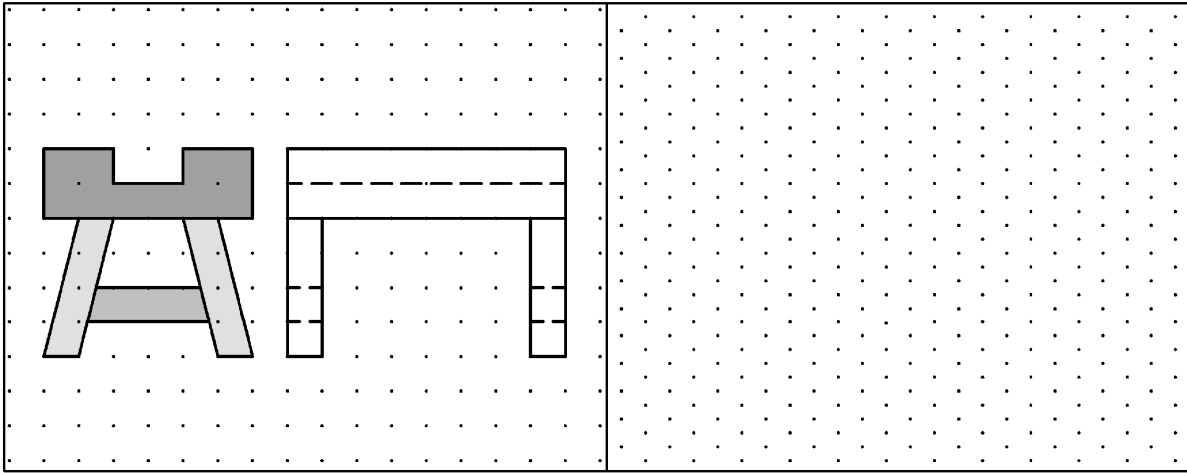
Show the point of contact between the arcs.



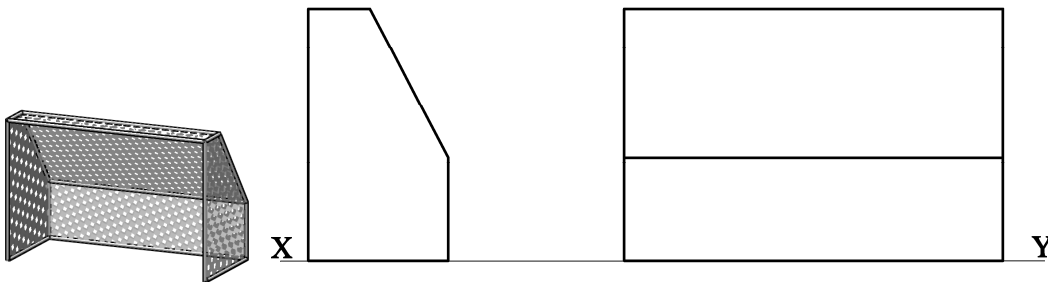
3 The figure shows the perspective drawing of a bouncy castle. The drawing is not complete. A 3D graphic of the bouncy castle is also shown. Complete the perspective drawing.



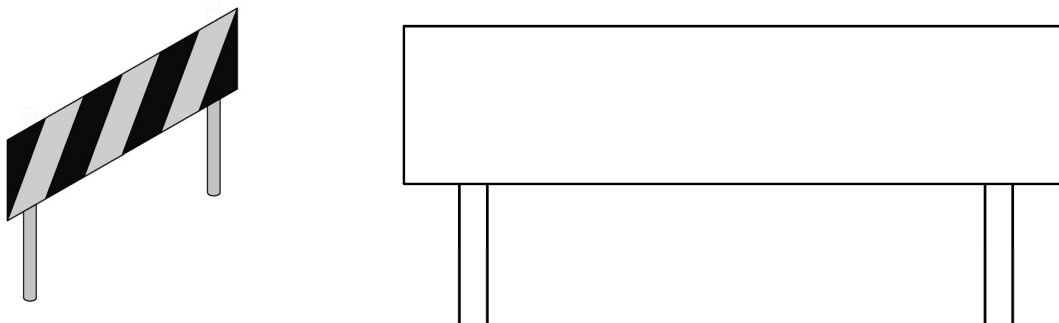
- 4 The elevation and end view of a workbench are shown. Make a **freehand pictorial sketch** of the workbench. Colour **or** shade the sketch.



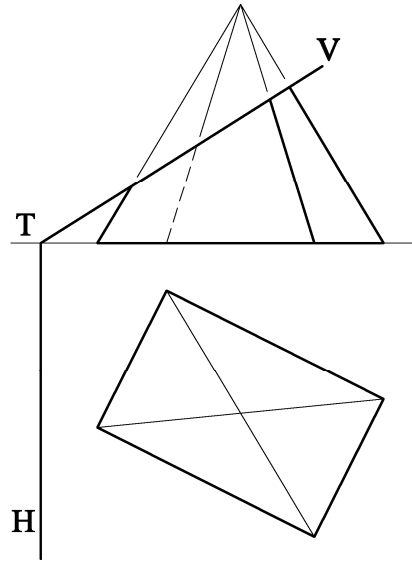
- 5 The figure shows the elevation and end view of a sports net. A 3D graphic of the net is also shown. Draw a development of the sports net.



- 6 The 3D graphic shows a reflective road safety sign with panels of equal width. Complete the elevation of the sign showing clearly how to determine the width of the panels.

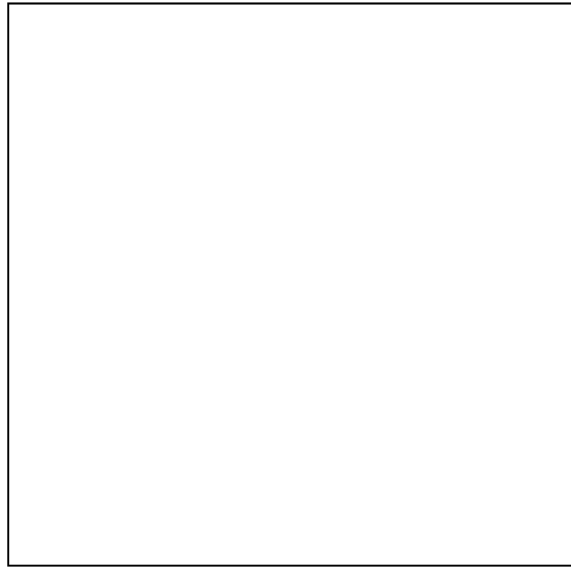
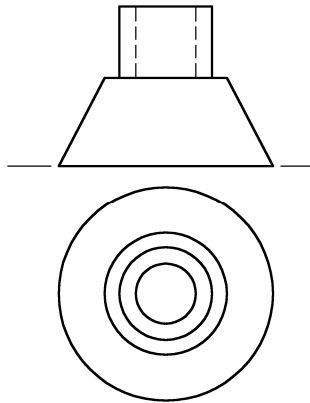


- 7 The figure shows the elevation and plan of a pyramid which is cut by the plane **VTH**.
Complete the plan of the pyramid.

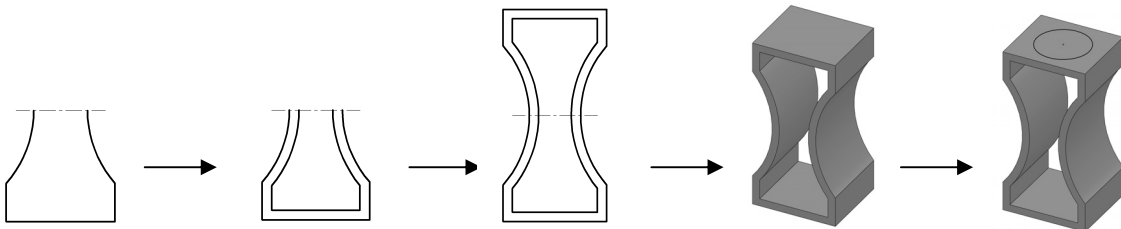


- 8 The elevation and plan of a kicking tee are shown. In the space provided, draw a **freehand pictorial sketch** of the kicking tee.
Colour or shade the sketch.

Colour or shade the sketch.



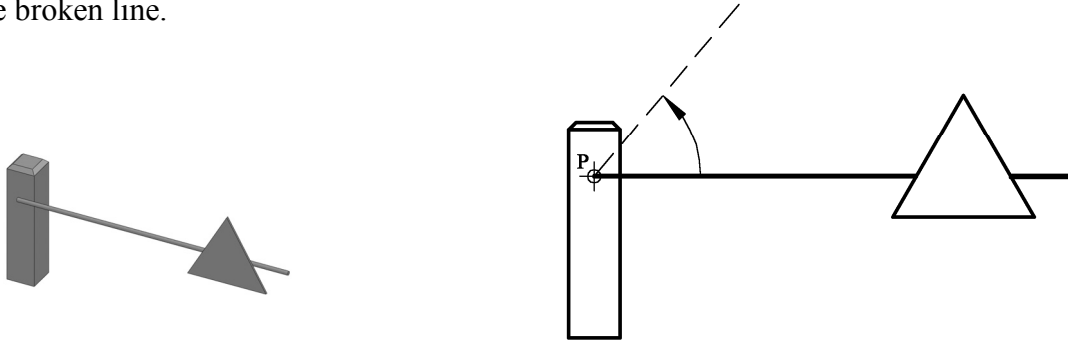
- 9 Write down **any three** CAD commands used to edit the figure as shown in the sequence.



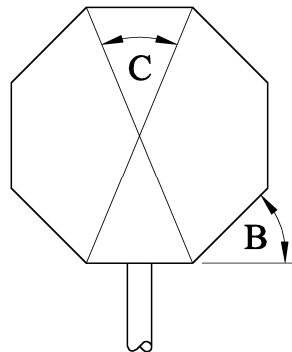
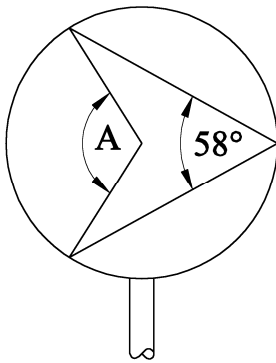
Any **three** CAD commands: _____

10 The figure shows the elevation of an entrance barrier. Also shown is a 3D graphic of the barrier in the closed position.

Rotate the barrier about point **P** to show the barrier in the open position, as indicated by the broken line.



11 Write down the measure of the angles **A**, **B** and **C**.



A = _____

B = _____

C = _____

12 **Fig. 1** shows the triangle **ABC** inscribed in a semi-ellipse. **Fig. 2** shows the axes and focal points of the ellipse and a point **P** on the curve. Determine the length of the major and minor axes and draw the triangle **ABC** in **Fig. 2**.

Note: It is not necessary to draw the semi-ellipse.

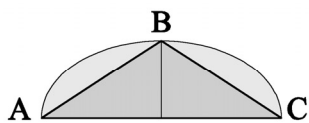


Fig. 1

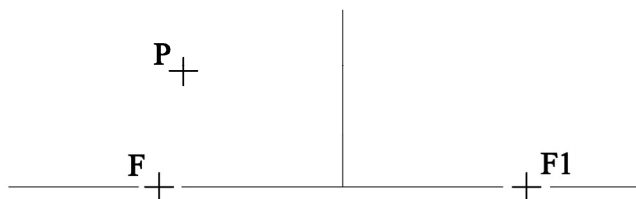


Fig. 2

- 13** Fig. 1 shows the design of a model speed boat. The design is not complete. Fig. 2 shows a small graphic of the boat, including the windscreen. The windscreen is based on a right-angled triangle. Complete Fig. 1 to show the windscreen of the boat.

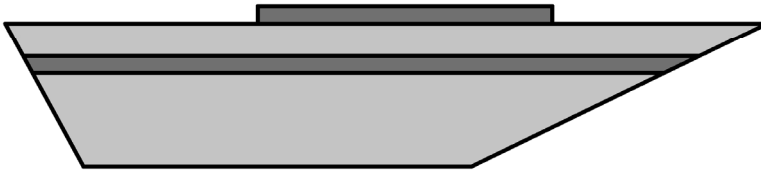


Fig. 1

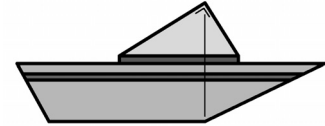
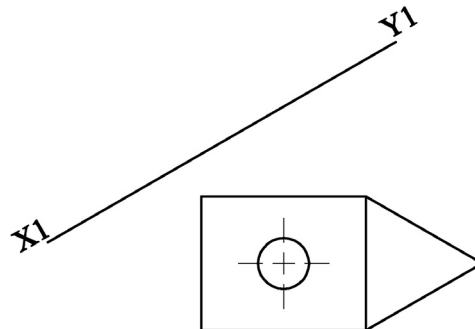
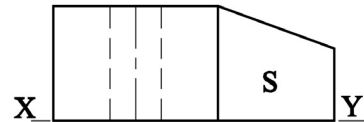
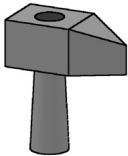


Fig. 2

- 14** The figure shows the elevation and plan of an axe head. A 3D graphic of the axe is also shown.

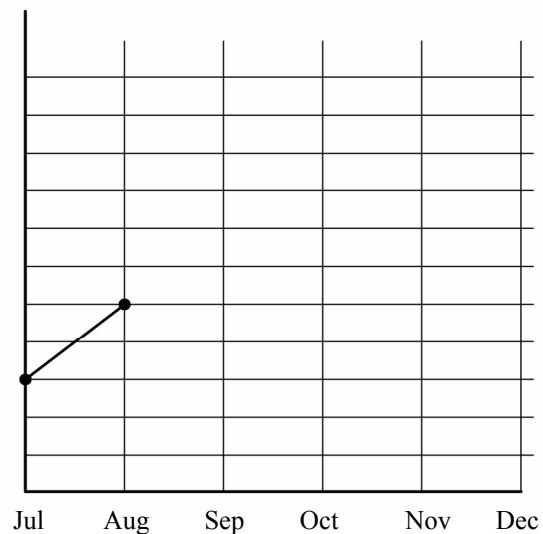
Project an auxiliary elevation of the axe head on the line **X1-Y1** to show the true shape of the surface **S**.



- 15** Sales of equipment for technical graphics were recorded during a six month period. The following were the sales:

- July - € 300
- August - € 500
- Sept - € 900
- Oct - € 400
- Nov - € 300
- Dec - € 600

Complete the chart to represent this information graphically.



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