



**Coimisiún na Scrúduithe Stáit**  
**State Examinations Commission**

*Junior Certificate Examination, 2012*

***Technical Graphics***  
***Ordinary Level***  
***Section A***

*(120 marks)*

***Monday, 18 June***  
***Morning 9:30 - 12:00***

***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:***

<b>Centre Number</b>

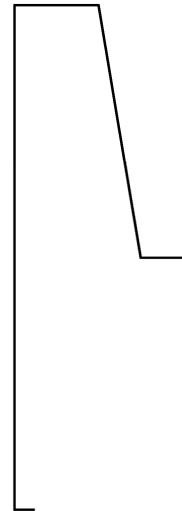
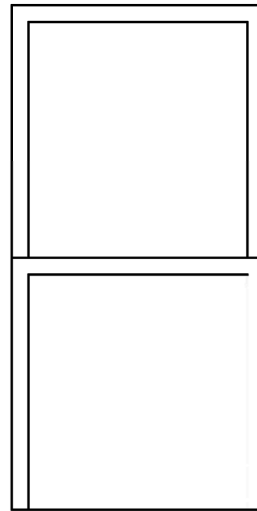
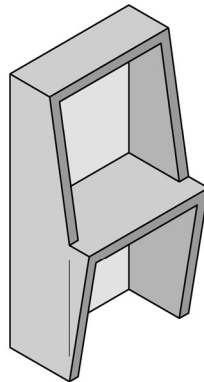
Question	Mark
Section A	
1	
2	
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6	
<b>TOTAL</b>	
<b>GRADE</b>	

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

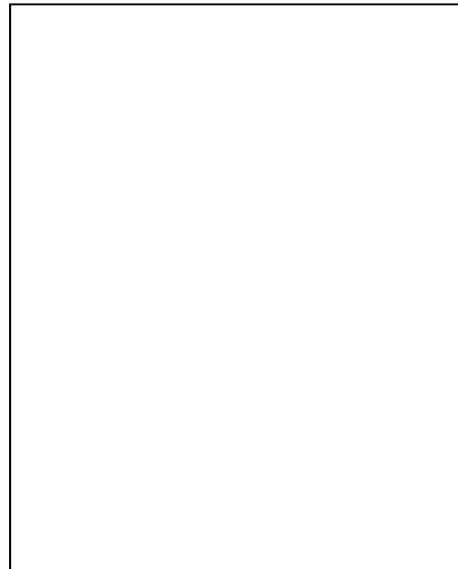
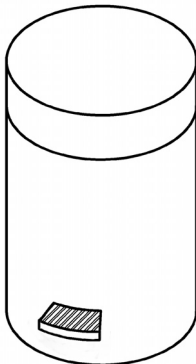
**1** Shown is the **incomplete** elevation and **incomplete** end view of a writing desk.

Also shown is a 3D graphic of the desk.

**Insert** the missing lines in both the elevation and the end view.



**2** In the space provided, make a **freehand sketch** of the wastepaper bin shown. Colour **or** shade the completed sketch.



**3** List **one** advantage and **one** disadvantage of a tablet computer, as shown.

**Advantage:**

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**Disadvantage:**

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- 4** Fig.1 shows a design for a speaker inscribed in the square ABCD. Draw an enlarged design of the speaker in the given square ABCD in Fig. 2.

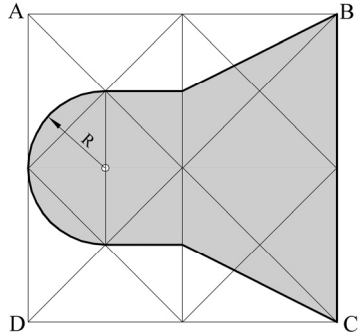


Fig. 1

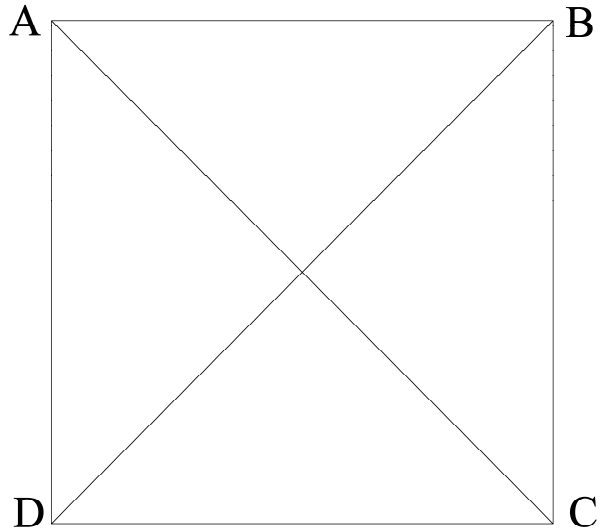


Fig. 2

- 5** Fig.1 shows the design of a helmet based on a semi-ellipse with an attached safety shield. The line PL is a tangent to the semi-ellipse at P. Locate the focal points of the semi-ellipse in Fig.2 and complete the design by drawing the tangent PL.

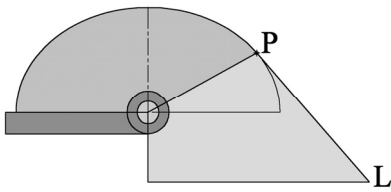


Fig. 1

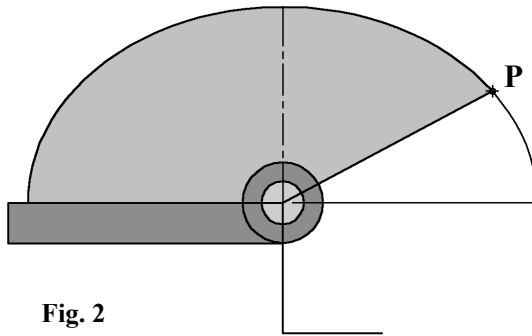
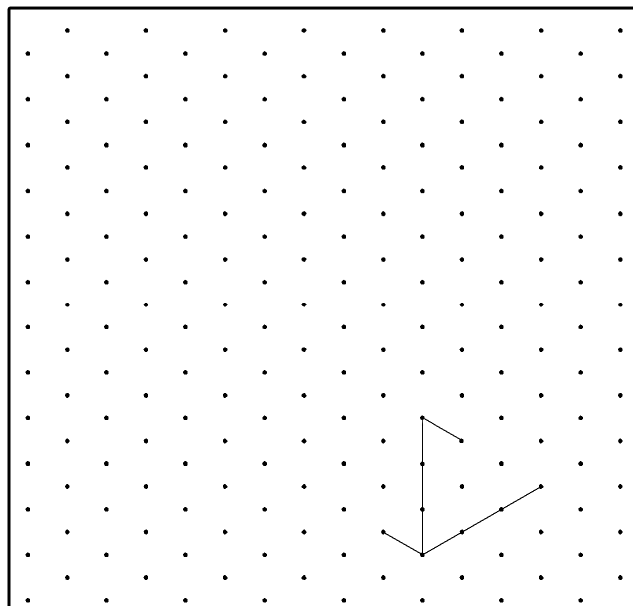
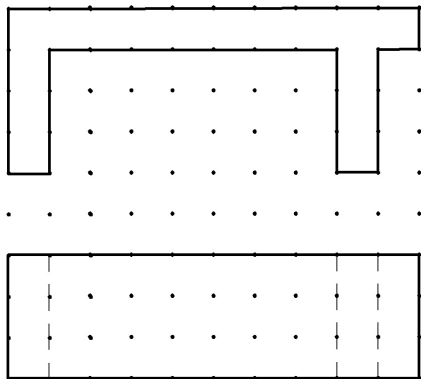


Fig. 2

- 6** The elevation and plan of a garden seat are shown. Complete the given 3D sketch of the seat on the grid provided. Colour or shade the completed sketch.

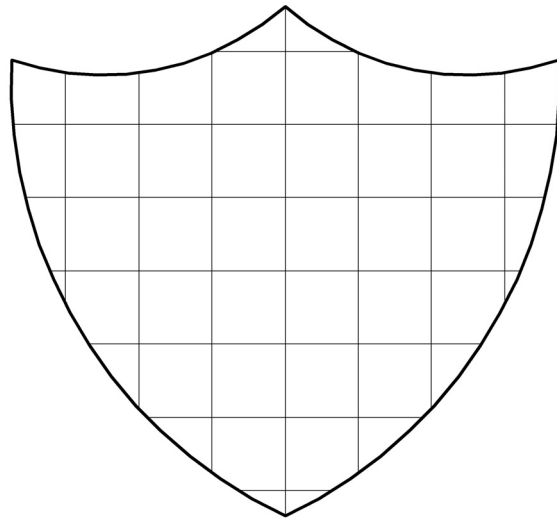


7 The design of a sports trophy is shown.

Write down the area of the trophy in square centimetres -  $\text{cm}^2$ .

1 square =  $1 \text{ cm}^2$

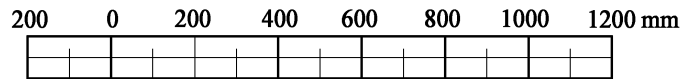
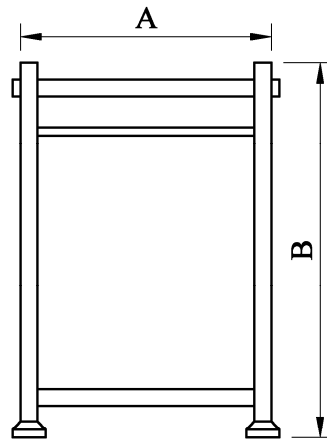
Area of the trophy: \_\_\_\_\_  $\text{cm}^2$ .



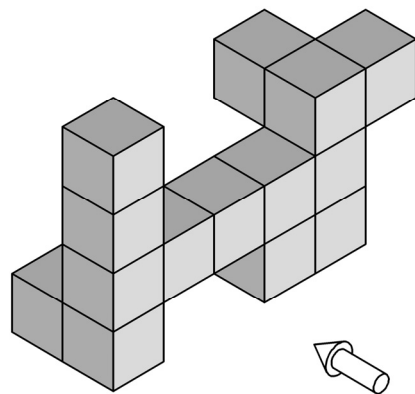
8 Using the scale provided, **measure** and **write down** the dimensions **A** and **B** of the clothes stand shown.

A: \_\_\_\_\_

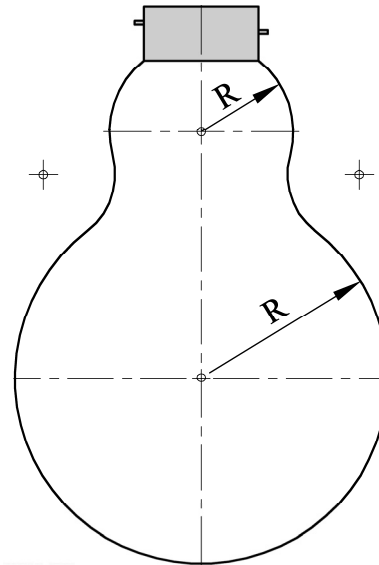
B: \_\_\_\_\_



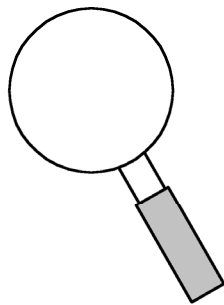
9 The figure shows a set of blocks. Draw, in the space provided, an elevation of the blocks in the direction of the arrow.



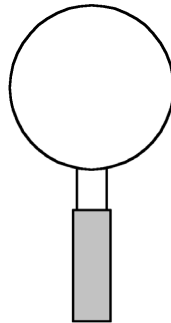
- 10** The drawing shows the design of a light bulb.  
Show clearly all the points of contact between the arcs.



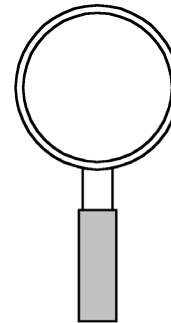
- 11** List the CAD commands used to produce the figures A to B and B to C.



**A**



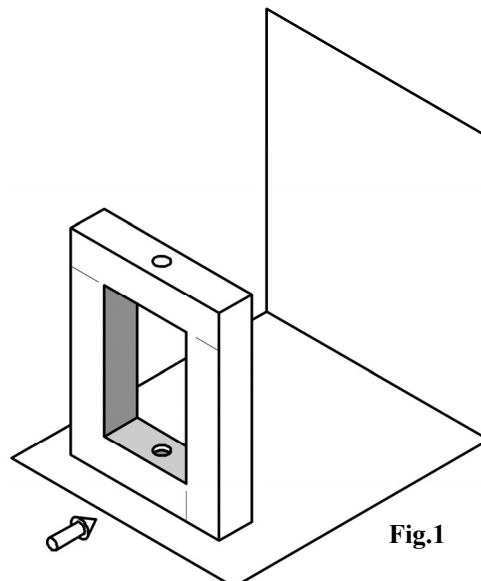
**B**



**C**

Commands: A → B \_\_\_\_\_ B → C \_\_\_\_\_

- 12** The graphic shows a small table lamp.  
Draw the **shadow** cast by the base of the lamp shown in Fig.1 when the direction of light is parallel to the arrow.



**Fig.1**

- 13** Fig.1 shows the design of a road sign based on a circle and a regular hexagon.  
Complete Fig. 2 to show the design of the road sign.

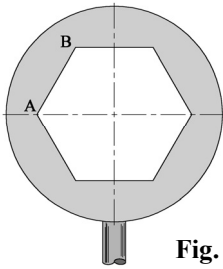


Fig. 1

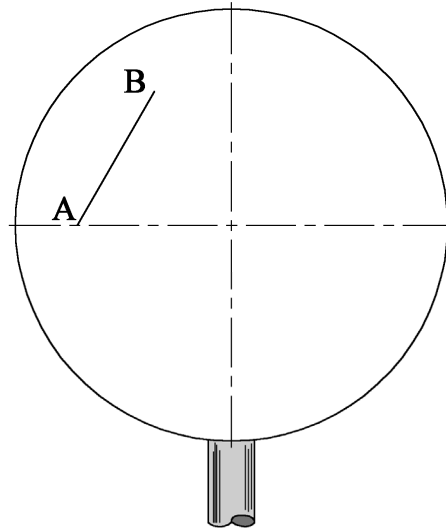
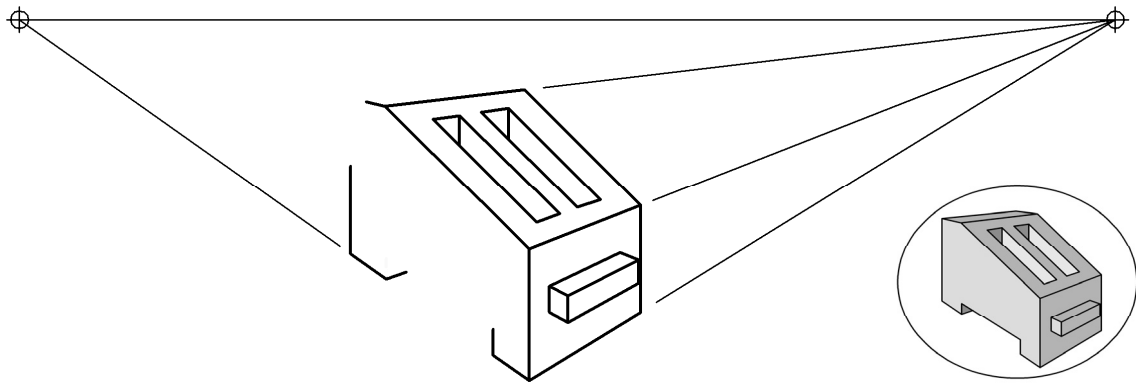


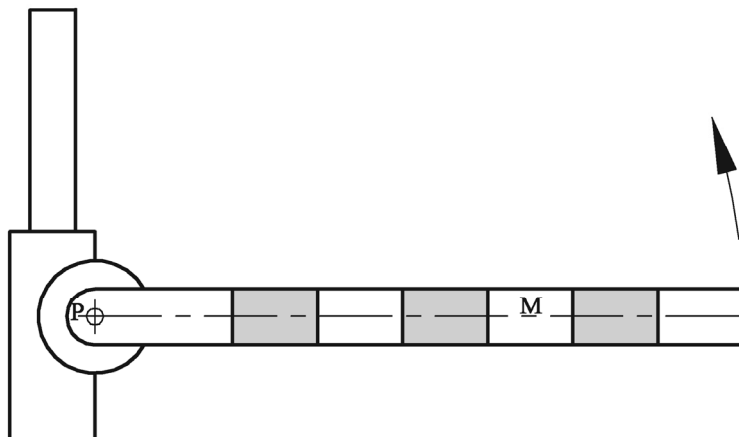
Fig. 2

- 14** The figure shows an incomplete perspective drawing of a toaster. A small 3D graphic of the toaster is also shown. Complete the perspective drawing.



- 15** The diagram shows a barrier at the entrance to a car park.

Rotate the arm **M** in the direction of the arrow through  $45^\circ$  about the point **P** and complete the drawing of the arm in the rotated position.



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