



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination, 2018

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:

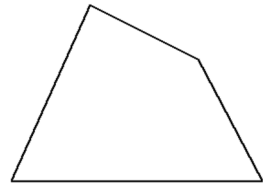
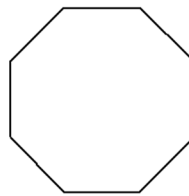
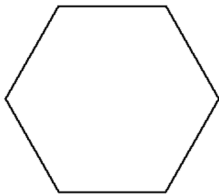
Centre Number

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 given list.

- Trapezoid
- Octagon
- Hexagon
- Parallelogram



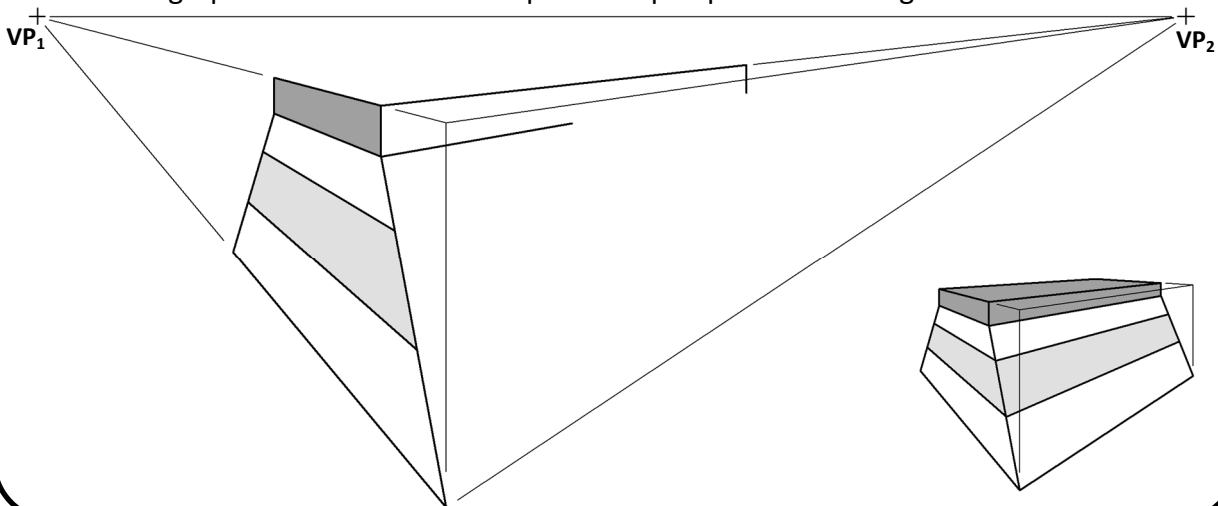
1. _____

2. _____

3. _____

4. _____

2. The figure shows the incomplete perspective drawing of a gymnastics pommel horse. A 3D graphic is also shown. Complete the perspective drawing.



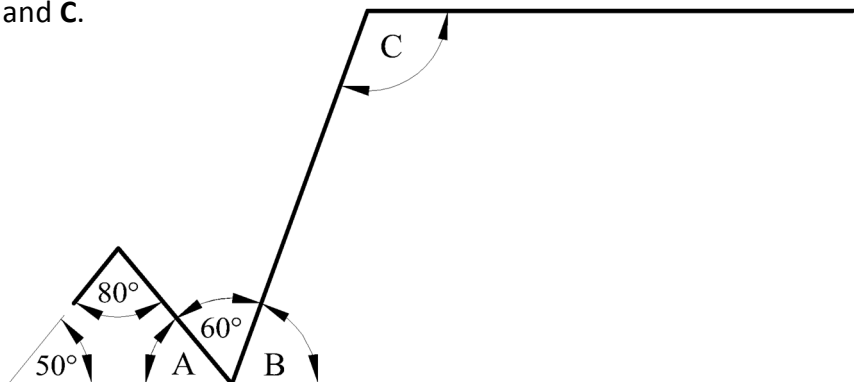
3. The figure shows the outline of a mathematical symbol.

Write down the measurements of the angles marked **A**, **B** and **C**.

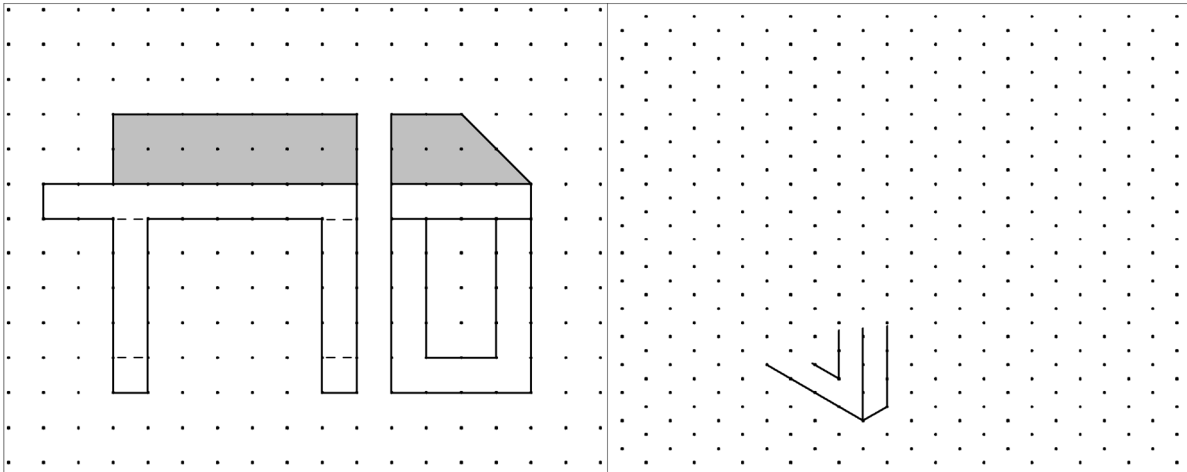
A = _____

B = _____

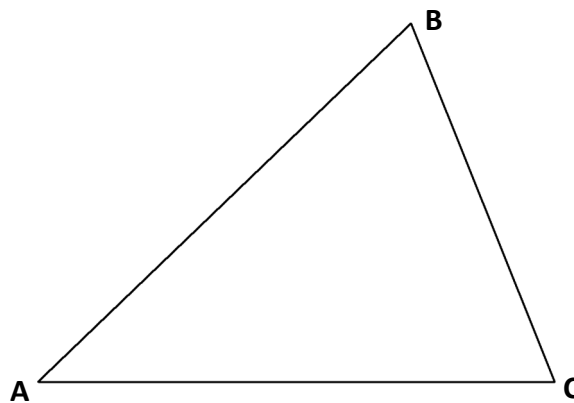
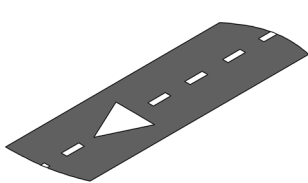
C = _____



4. The elevation and end view of a barbeque are shown on the square grid. Make a **freehand pictorial sketch** of the barbeque. Colour **or** shade the sketch.

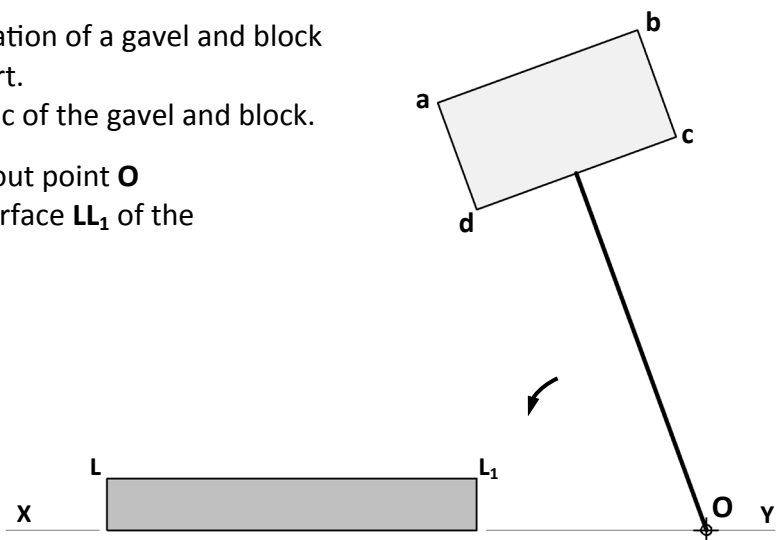
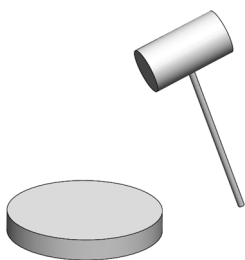


5. The surface area of road markings, similar to that shown in the 3D graphic, is specified by law. The figure shows the triangular outline **ABC** of a directional road marking. Convert the triangle **ABC** to a rectangle of equal area.



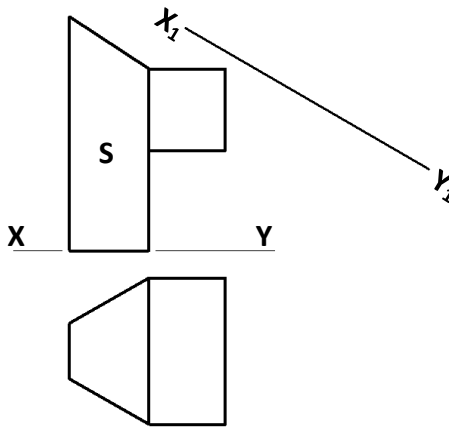
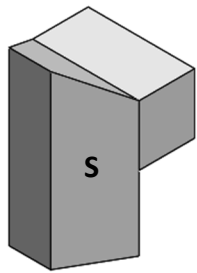
6. The figure shows an elevation of a gavel and block as used by a judge in court. Also shown is a 3D graphic of the gavel and block.

Rotate the gavel **abcd** about point **O** until it reaches the top surface **LL₁** of the block.



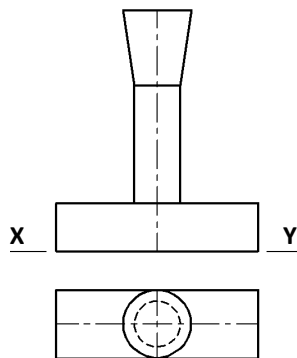
7. The figure shows the elevation and plan of a lectern.
A 3D graphic of the lectern is also shown.

Project an auxiliary elevation of the lectern on the line X_1-Y_1 to show the true shape of surface S .

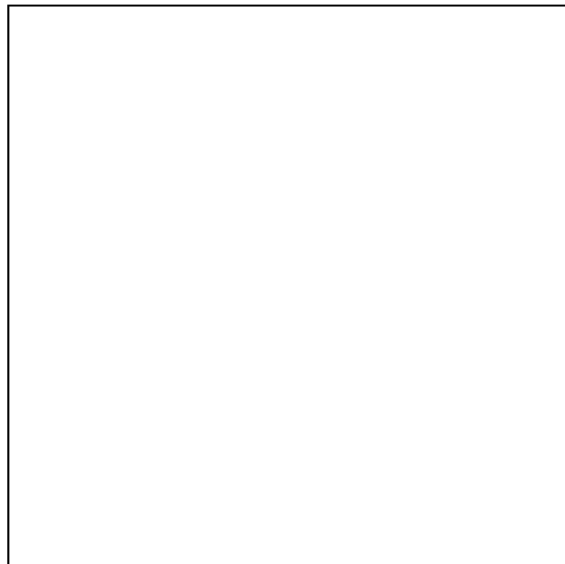


8. The elevation and plan of a date stamp are shown.

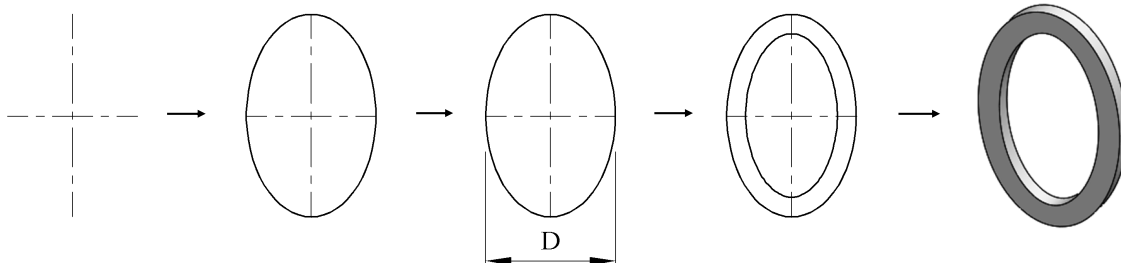
In the space provided, draw a **freehand pictorial sketch** of the stamp.



Colour **or** shade the completed sketch.



9. Write down **any three** CAD commands used to edit the drawing of the hall mirror, as shown in the sequence below.

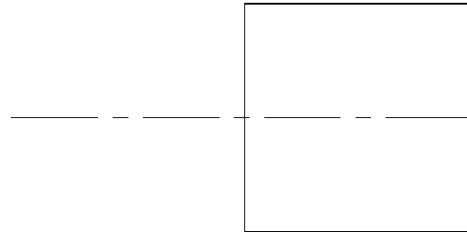
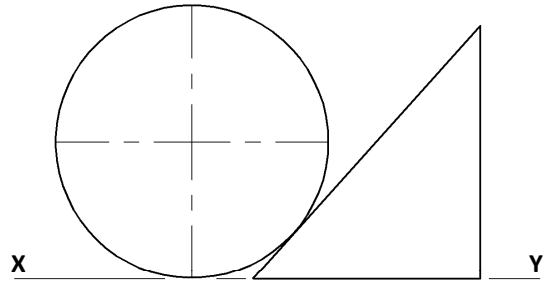
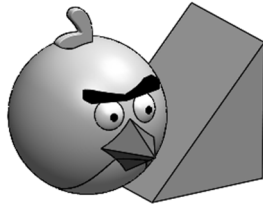


Any **three** CAD commands:

10. Shown is the outline elevation and incomplete plan of an *angry bird* character in contact with a sloping block.

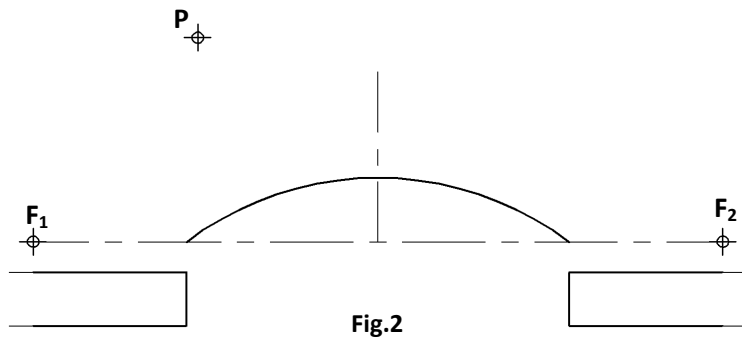
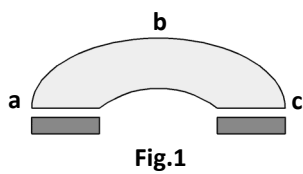
A 3D graphic is also shown.

Draw the plan of the sphere and locate the point of contact between the sphere and block.



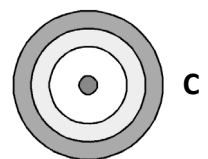
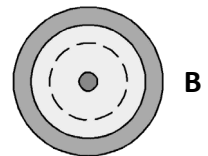
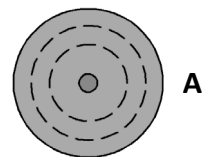
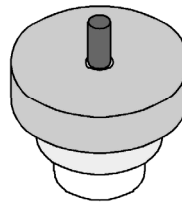
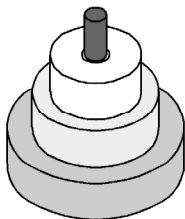
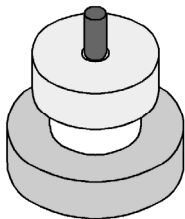
11. Fig.1 shows a logo for a telephone company. The curve **abc** is based on a semi-ellipse. Fig. 2 shows the location of the axes and focal points of the semi-ellipse. The point **P** is a point on the curve.

Determine the lengths of the major and minor axes and complete the drawing of the logo.



12. The graphic below shows three stacking puzzles. The plan of each puzzle is shown on the right.

Match the correct letter with the appropriate puzzle below.

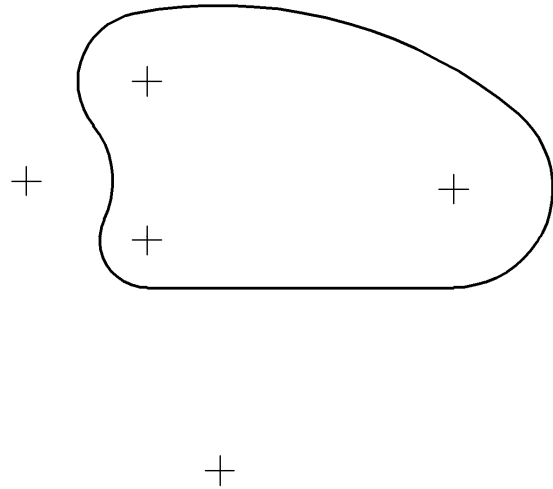
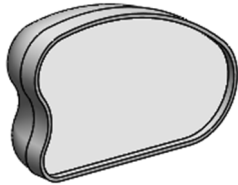


1. _____

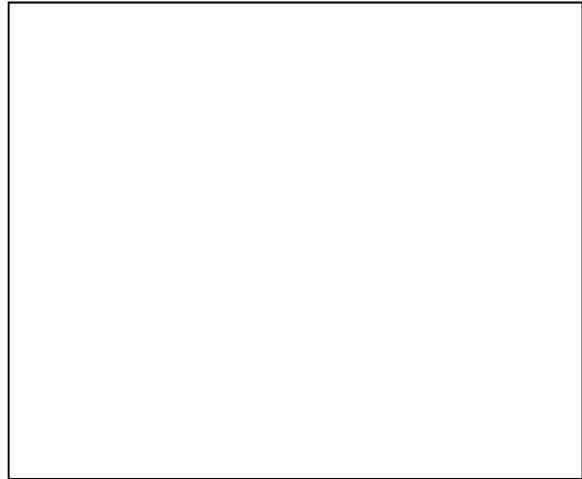
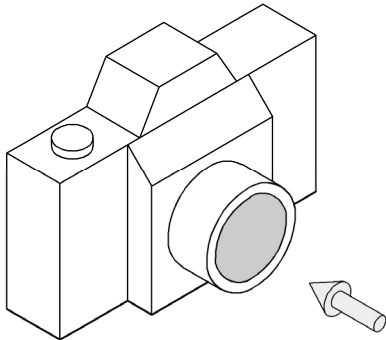
2. _____

3. _____

- 13.** The graphics show the design of a door mirror for a car.
The centres of the arcs are shown.
Show clearly **all** points of contact.



- 14.** The graphic shows a digital camera.
Draw a well-proportioned **freehand** sketch of the **elevation** of the camera viewed in the direction of the arrow.



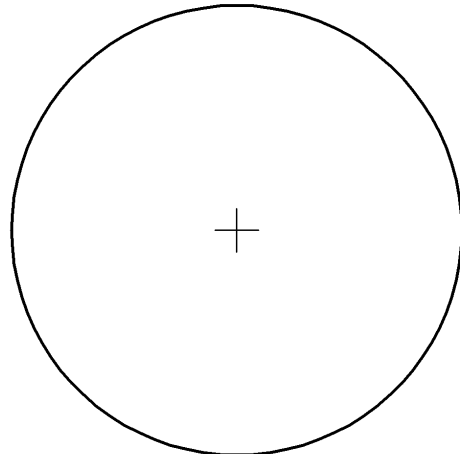
- 15.** Twenty four tourists were surveyed while visiting a village in Ireland.

The following were the nationalities of the tourists surveyed:

United Kingdom	-	12
United States	-	6
Germany	-	3
France	-	3

Divide the given circle to represent this information graphically as a pie chart.

Colour **or** shade the completed pie chart.



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