AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA **S61A**

A JUNIOR CERTIFICATE EXAMINATION, 2002

TECHNICAL GRAPHICS — HIGHER LEVEL

THURSDAY 13 JUNE — MORNING, 9.30 - 12.30

TOTAL MARKS 400 (Sections A and B)

Examination Number	Centre Stamp
☞	☞

INSTRUCTIONS

(a) Answer <u>any ten</u> of the short answer questions in Section A (120 marks) using the spaces provided. All questions in Section A carry equal marks.

(b) Answer <u>any four</u> of the six questions in Section B (280 marks). All questions in Section B carry equal marks.

(c) Examination Number must be distinctly marked <u>in the space provided above</u> and on each sheet of paper used.

(d) All construction lines must be clearly shown.

(e) All measurements are in millimetres.

(f) Hand up this answer book (Section A) at the end of the examination.

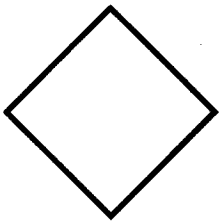
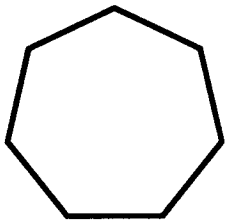
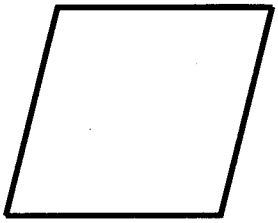
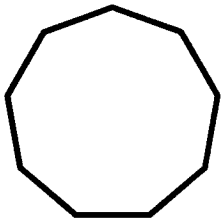
For Examiner's Use Only		
QUESTION		**MARK**
Section A (Total)		
Section B	**Q1**	
	Q2	
	Q3	
	Q4	
	Q5	
	Q6	
TOTAL	➡	
GRADE	➡	

WARNING

THIS ANSWERBOOK MUST BE HANDED UP AT THE END OF THE EXAMINATION OTHERWISE MARKS WILL BE LOST.

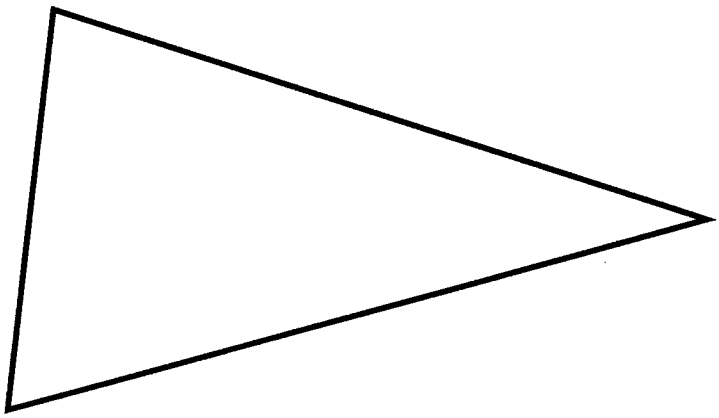
1. Correctly fill in the labels for each of the diagrams by selecting from the table shown.

TABLE			
Nonagon	Square	Heptagon	Rhombus

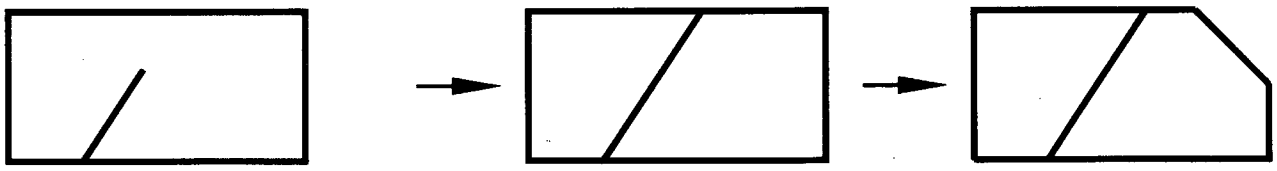





_____ _____ _____ _____

2. Inscribe a circle in the triangle shown. Determine the points of contact.

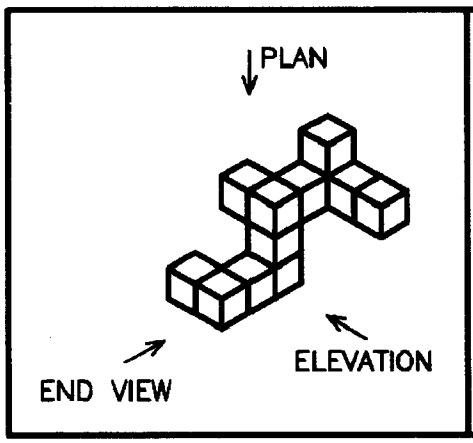


3. List the CAD commands used to edit the figure as shown in the sequence below.

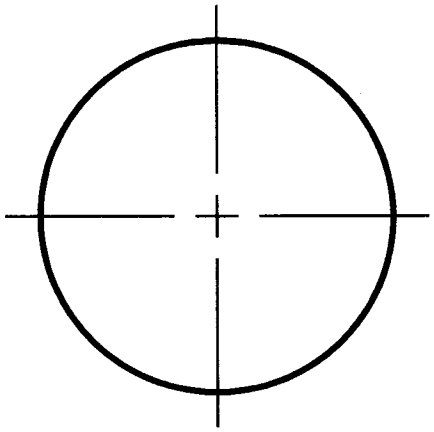


Editing commands used: _____ _____

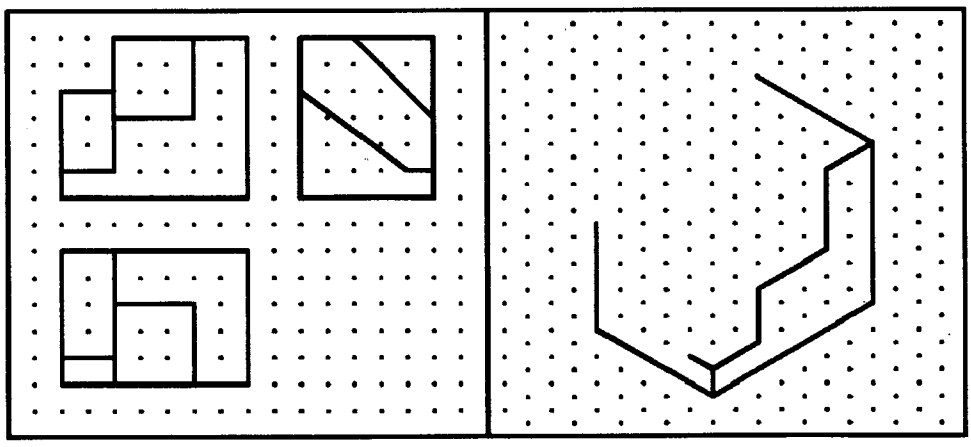
4. Using the square grid, sketch the orthographic views when viewed in the direction of the arrows.



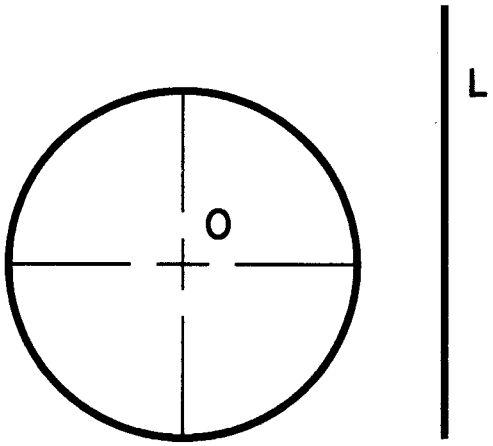
5. Inscribe a regular pentagon in the circle shown. Show all constructions required.



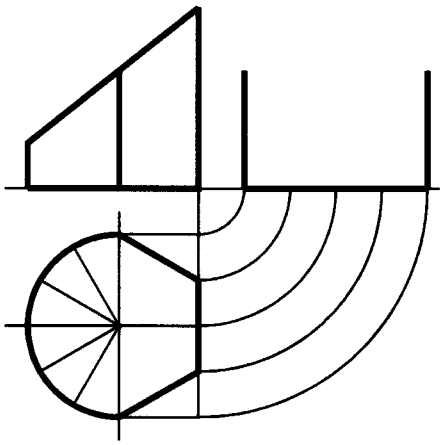
6. Shown on the square grid are three orthographic views of an object. The incomplete pictorial sketch of the object is shown on the isometric grid. Complete the pictorial sketch.



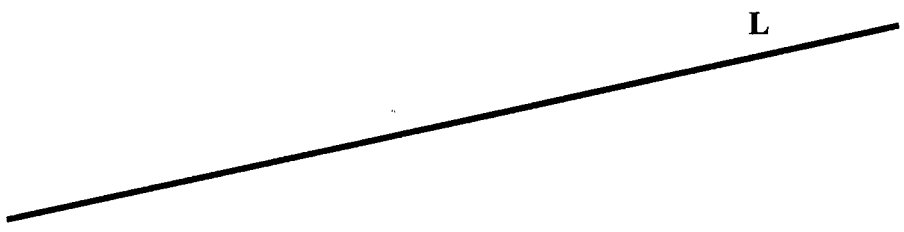
7. Shown is a circle with centre O and a line L. Locate a point P which is 10mm from the circumference of the circle and 15mm from the the line L.



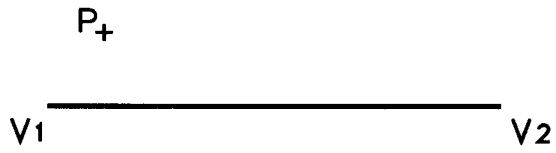
8. The elevation, plan and <u>incomplete</u> end view of a truncated solid are shown. Complete the end view.



9. Divide the given line L in the ratio 2:3:4

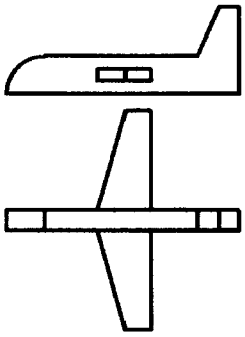


10. Shown is the major axis V1— V2 of an ellipse and a point P which lies on the curve. Draw the minor axis to show its correct position and length.

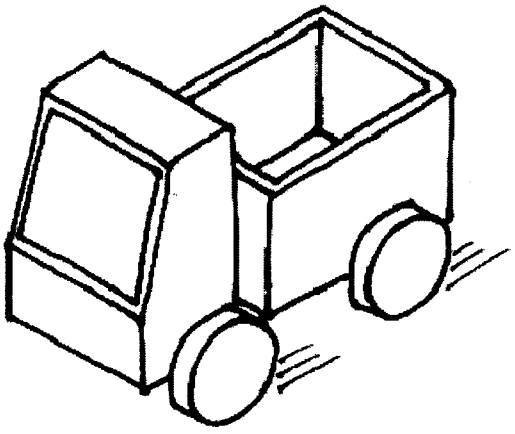


11. Shown is the elevation and plan of a model plane.

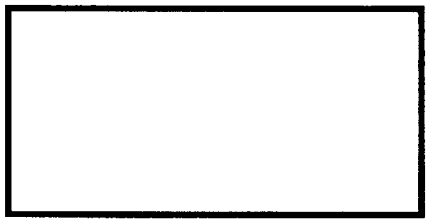
Make a <u>freehand pictorial</u> sketch of the model plane in the space provided.



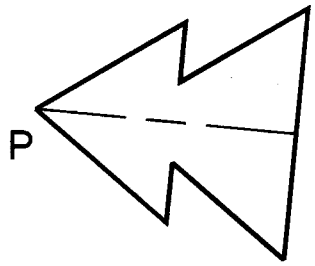
12. Apply shading to enhance the sketch of the toy truck shown.



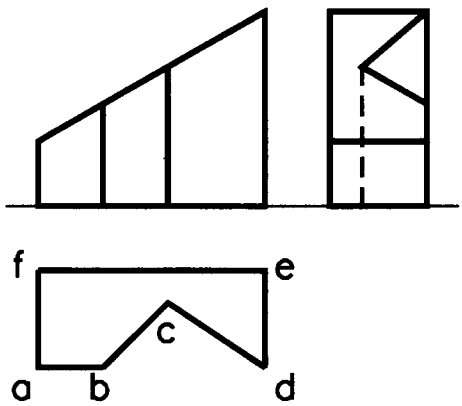
13. Convert the given rectangle into a square of equal area.



14. Rotate the given figure anti-clockwise through 60° about point P.



15. The orthographic views of a shaped solid are shown. The sloping top surface has been indexed in plan. Index this surface in elevation and end view.



AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA **S61B**

B JUNIOR CERTIFICATE EXAMINATION, 2002

TECHNICAL GRAPHICS — HIGHER LEVEL

THURSDAY 13 JUNE — MORNING, 9.30 - 12.30

SECTION B — 280 MARKS

INSTRUCTIONS FOR SECTION B

(a) Any four questions to be answered.

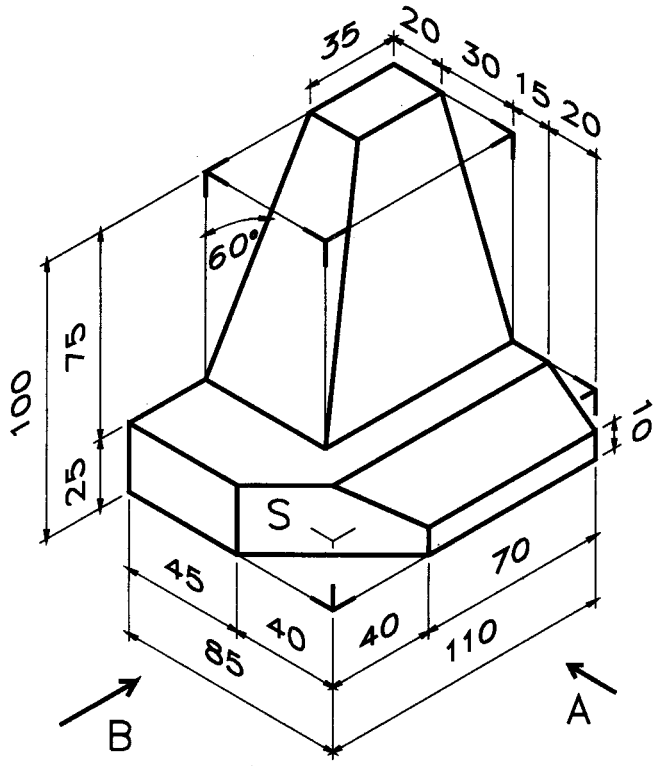
(b) All questions in this Section carry equal marks.

(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) Examination number must be distinctly marked on each sheet of paper used.

1. A pictorial view of a monument is shown.



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

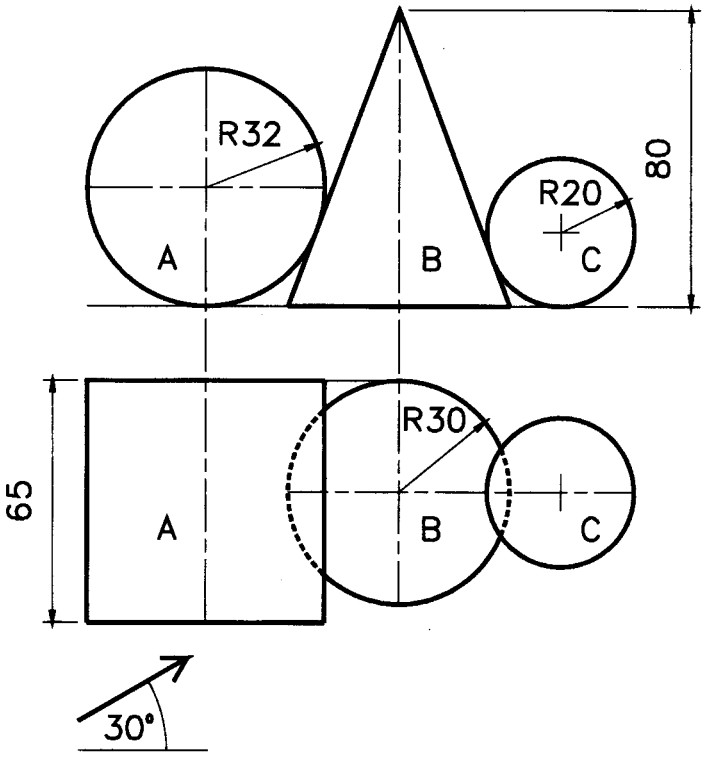
(b) Draw an end view looking in the direction of the arrow B.

(c) Draw a plan projected from (a) above.

(d) Draw an auxiliary elevation of the <u>complete structure</u> which will show the true shape of the surface S.

2. The figure shows the elevation and plan of a cylinder A, cone B and sphere C in mutual contact.

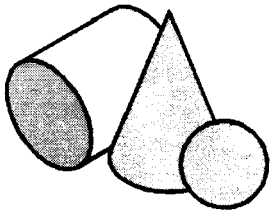
A sketch of the solids is also shown.



(a) Draw the elevation and plan as given.

(b) Draw an auxiliary elevation of the solids when viewed in the direction of the arrow.

(c) Show the points of contact in all projections.



3. The figure shows the incomplete isometric projection of a pen holder using the axonometric axes method.

The side elevation and plan are shown in their required positions.

A sketch of the pen holder is also shown.

(a) (i) Draw the axonometric axes X, Y and Z.

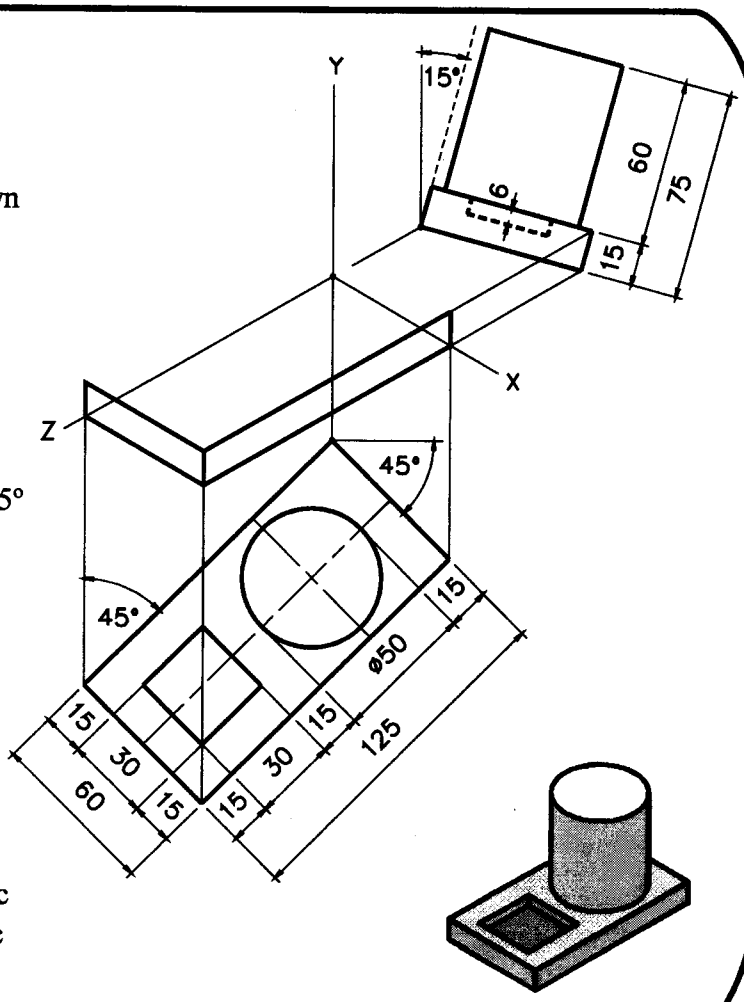
(ii) Draw the plan orientated at 45° as shown.

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

(iv) Draw the completed axonometric projection.

OR

(b) Draw the completed isometric projection using the isometric scale.

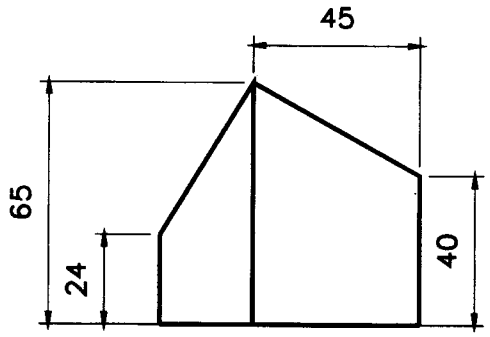


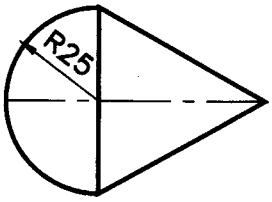
4. The figure shows the elevation and plan of a closed container.

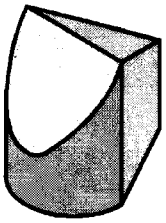
A sketch of the container is also shown.

(a) Draw the given views.

(b) Draw the complete surface development of the container.







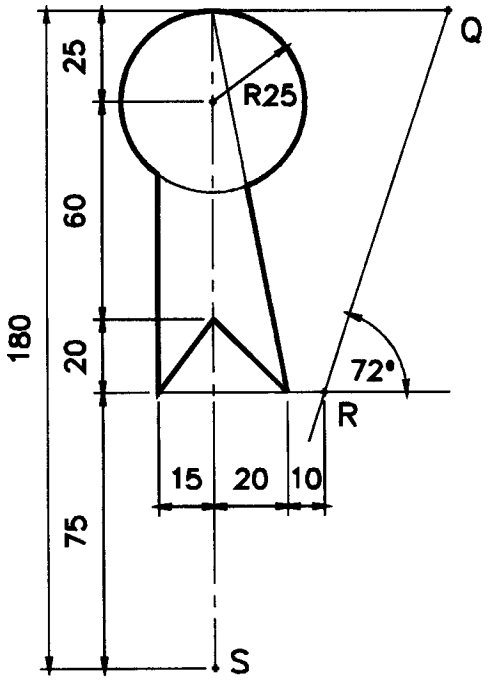
5. The figure of the rosette shown is subjected to transformations in the following order:-

(i) Axial symmetry in the line QR.

(ii) Translation equal to $\overrightarrow{QR}$

(iii) Central symmetry in point S.

Draw the given figure and determine the image figures in each of the transformations.



6. The figure shows a design based on a fish. The curve ABCDE is based on an ellipse with major axis 130 and a focal point F. The line BP is tangential to the ellipse at point B.

The curve QDR is based on a parabola with vertex D.

Draw the given figure showing all construction lines.