AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA   S61A

A JUNIOR CERTIFICATE EXAMINATION, 2001

TECHNICAL GRAPHICS — HIGHER LEVEL

THURSDAY 14 JUNE — MORNING, 9.30 - 12.30

TOTAL MARKS 400 (Sections A and B)

Examination Number	Centre Stamp
☞	☞

INSTRUCTIONS

(a) Answer <u>any twelve</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				
Acute	Equilateral	Isosceles	Obtuse	Scalene

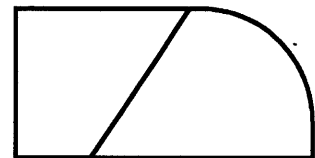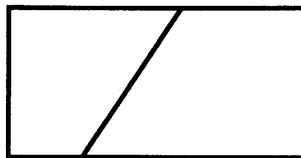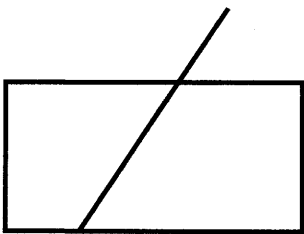_____   _____   _____   _____   _____
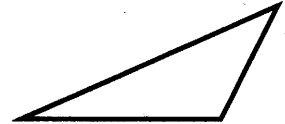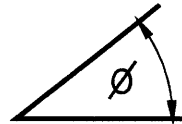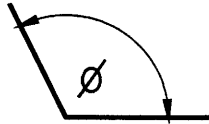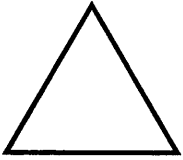
2. Construct a circle to pass through the three given points A, B and C.
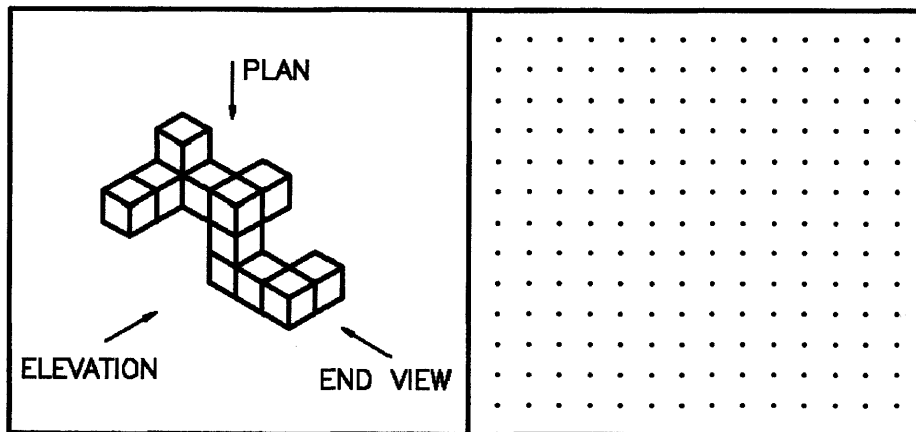
A +

+ B

C +

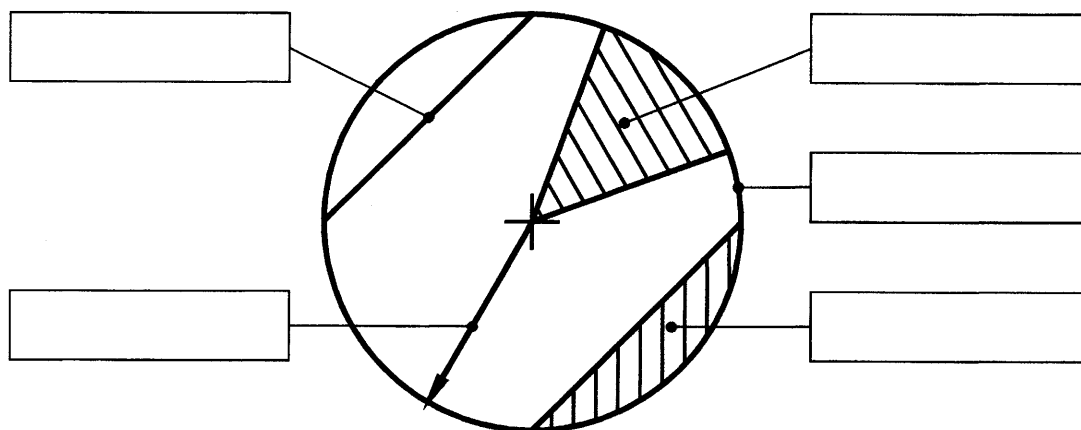**3.** List the CAD commands used to edit the figure as shown in the sequence below.

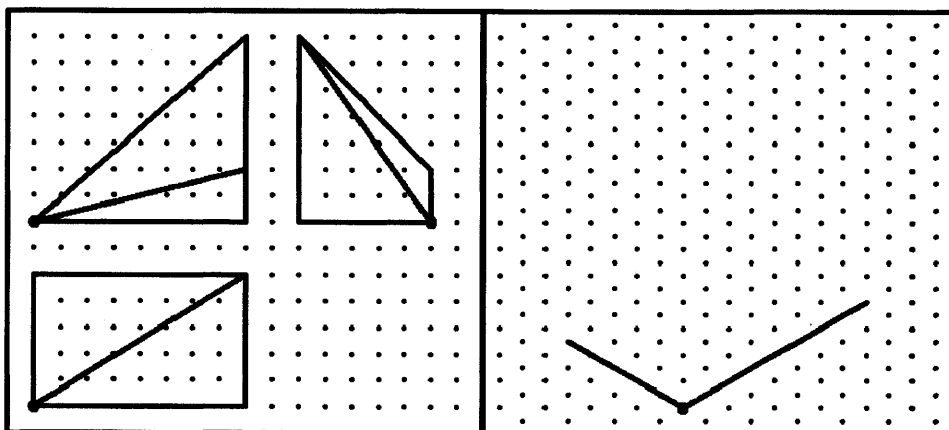**Commands used:**   _____   _____

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


5. Label the parts of the circle shown.

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. The line L represents a ladder leaning against a wall. Determine the location of the point P on the ladder when the base of the ladder is repositioned at Q.
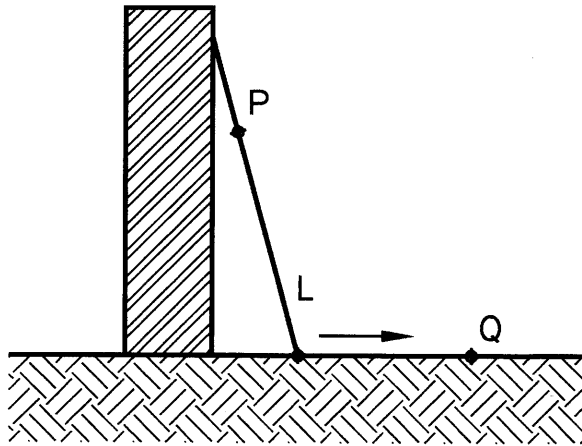
8. The projections of a pyramid are shown. Draw the development of the surface S.
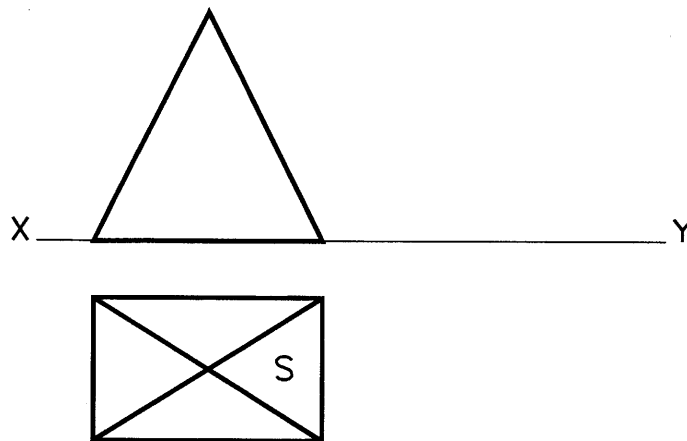
9. Enlarge the sides of the given figure in the ratio 3:5.

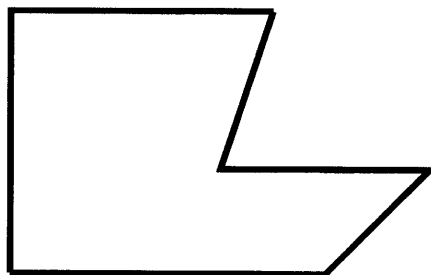**10.** The elevation and plan of a truncated cylinder are shown. Develop the true shape of the cut surface S of the cylinder.
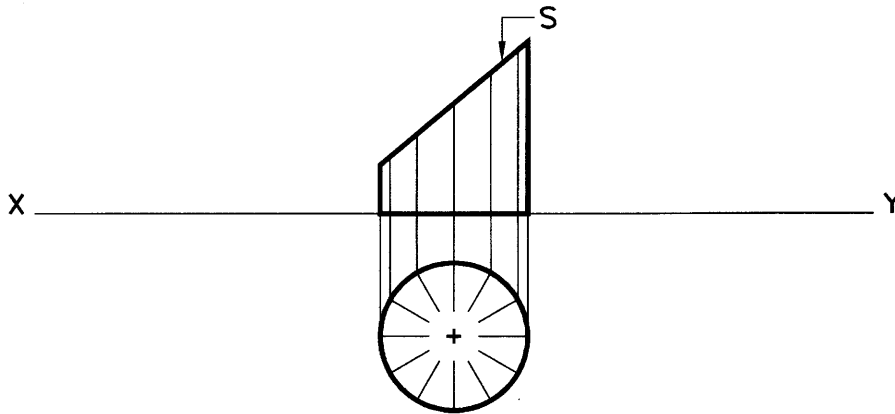
11. The elevation and plan of a ring are shown. Draw a <u>freehand</u> pictorial sketch of the ring in the space provided.

12. Apply shading to enhance the sketch of the table tennis bat and ball shown.
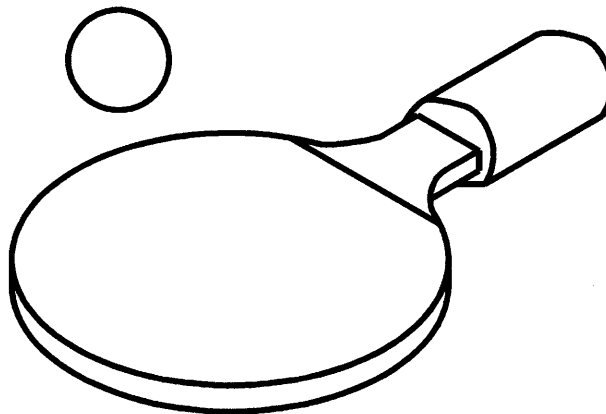
13. Draw a line from P which will divide the area of the triangle PQR into two equal parts.
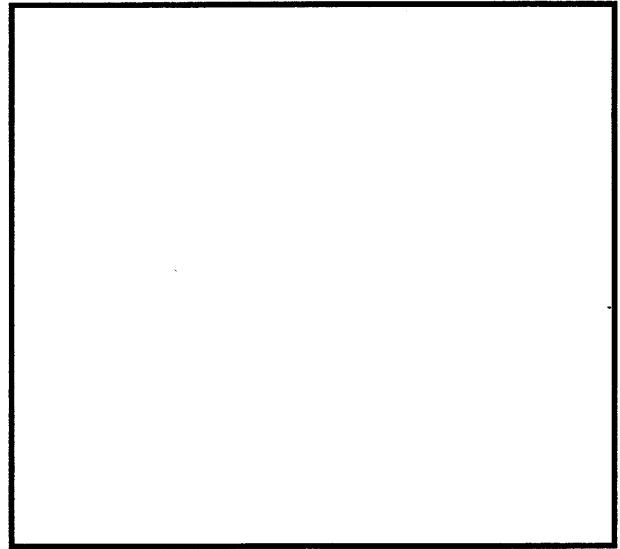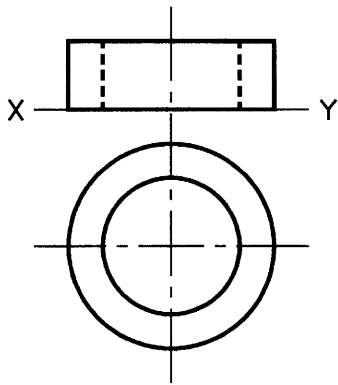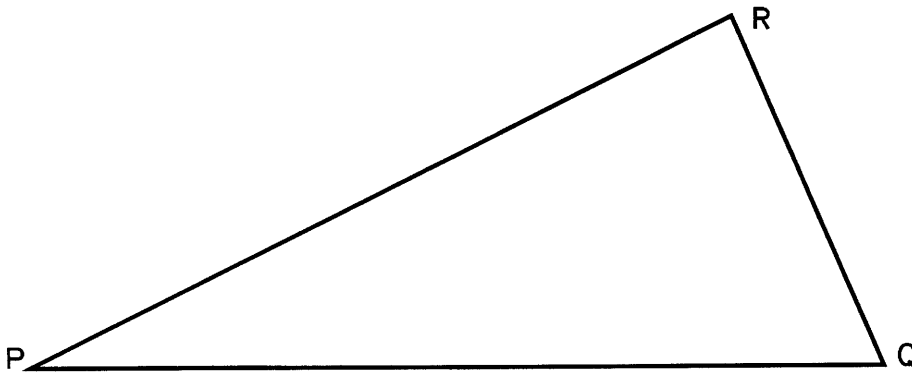

14. Draw the image of the figure under central symmetry in point P.

P
+

15. The elevation and plan of a truncated pyramid are shown. All points in plan have been indexed. Correctly index the elevation.

AN ROINN OIDEACHAIS AGUS EOLAÍOCHTA   S61B

1 3434
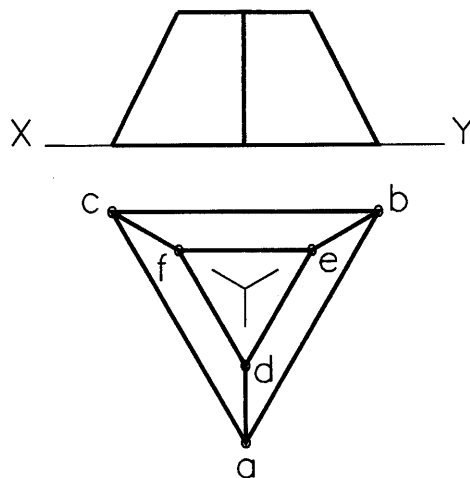
B JUNIOR CERTIFICATE EXAMINATION, 2001

TECHNICAL GRAPHICS — HIGHER LEVEL

THURSDAY 14 JUNE — MORNING, 9.30 - 12.30

SECTION B — 280 MARKS

INSTRUCTIONS FOR SECTION B

(a) <u>Any four</u> questions to be answered.

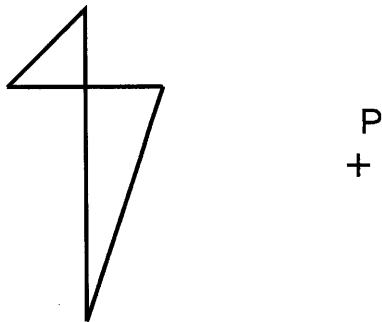(b) All questions in this Section carry equal marks.

(c) The number of the question must be distinctly marked by the side of each answer.

(d) Work on <u>one side</u> of the paper only.

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

1. The figure shows a flight of steps. Each step is of equal height.
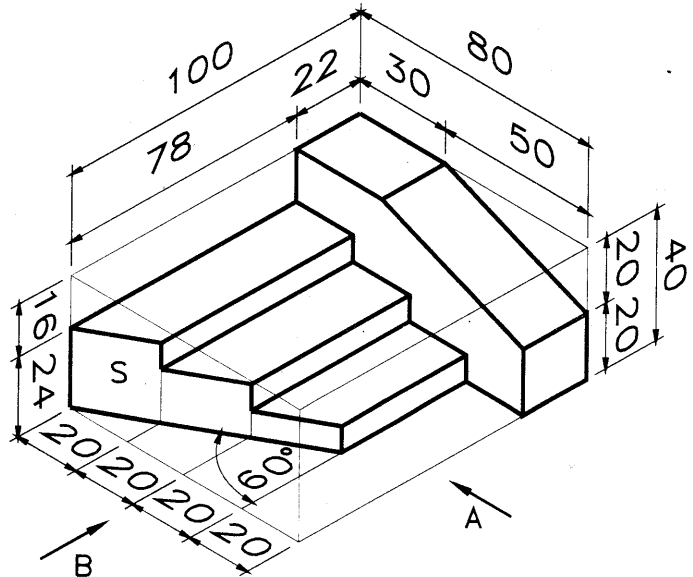
(a) Draw an elevation looking in the direction of the arrow A.

(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 figure to show the true shape of the surface S.

2. The figure shows the elevation, plan and end view of the tailboard of a tipper truck.

The tailboard features a design based on a regular pentagon and tangents to a circle.

(a) Draw the given views.

(b) Draw the plan of the tailboard when it has rotated to a position at 45° to the vertical plane as indicated by the dotted line in the end view.
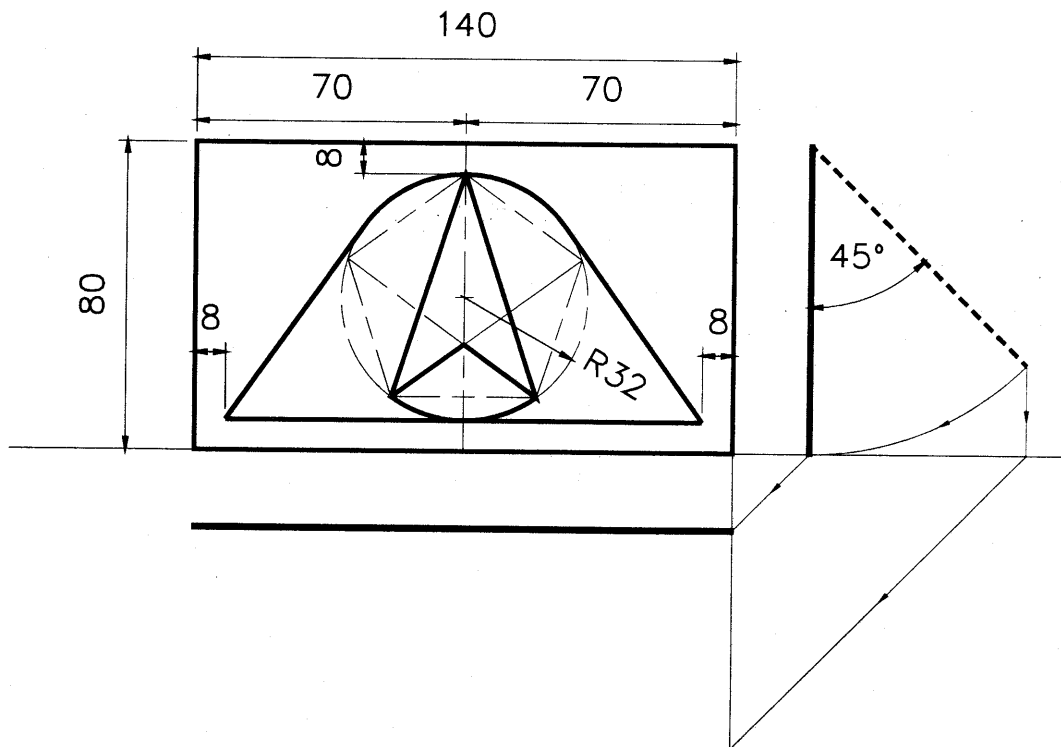
3. The figure shows the incomplete isometric projection of a paper weight using the axonometric axes method. The side elevation and plan are also shown in their required positions.

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

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

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

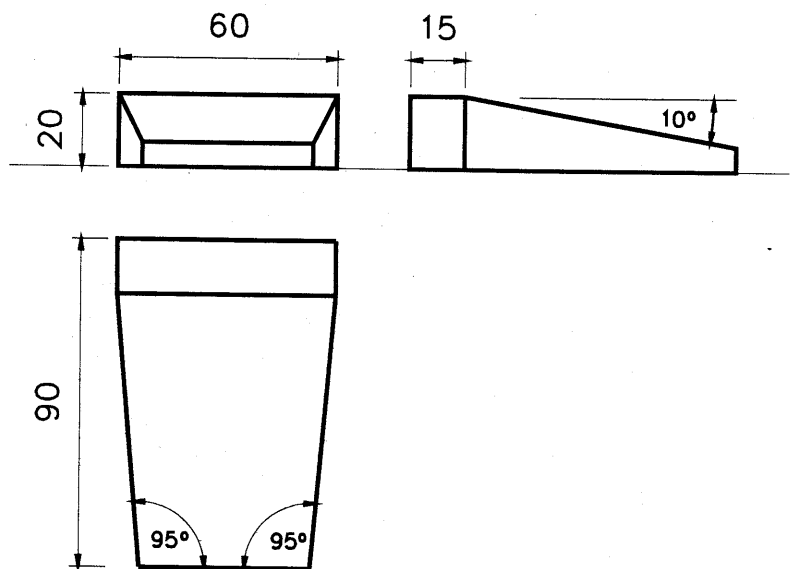(iv) Draw the completed isometric projection of the paper weight.

OR

(b) Draw the completed isometric projection of the paper weight using the isometric scale method.
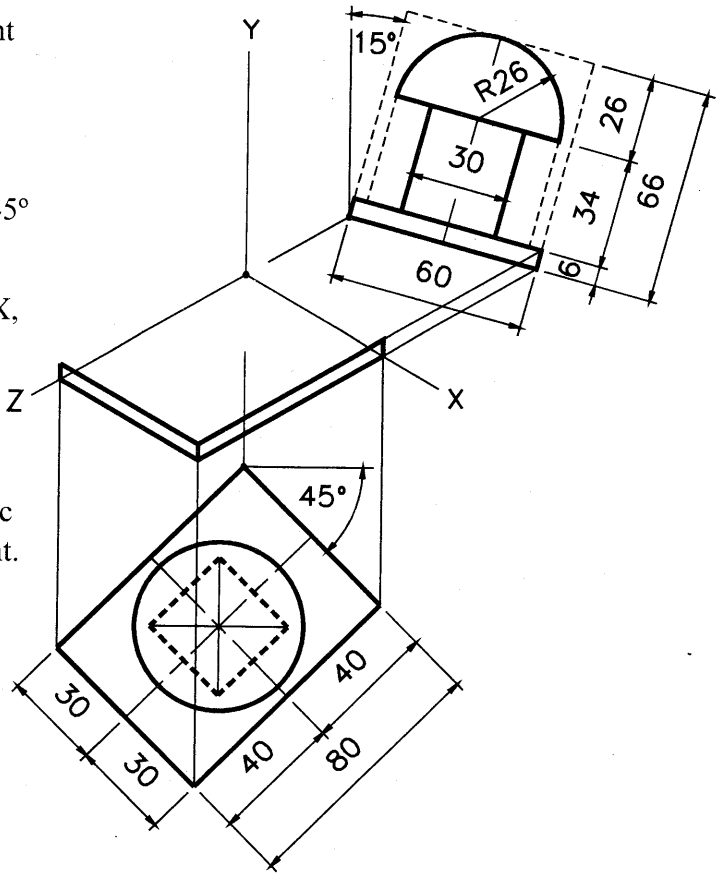
4. The elevation, plan and end view of a laptop writing unit are shown.

(a) Draw the given views.

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

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

(i) Axial symmetry in the line L - L1.

(ii) Central symmetry in point S.

(iii) Translation equal to $\overrightarrow{ST}$.

(iv) Rotation clockwise about point R through an angle of 35°.
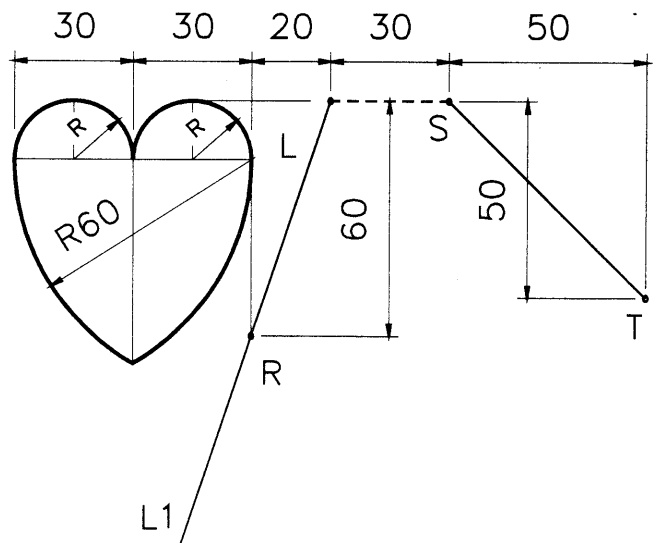
Draw the given figure and determine the image figures in each of the transformations.

30   30   20   30   50

R   R

R60

L

S

60

50

R

T

L1

6. The figure represents a two-button computer mouse and cable.

The curve ABCD is an ellipse with major axis 120mm long.

The curves QA and QR are based on the same semi-parabola with the vertex at Q for each parabola.

Draw the figure to the dimensions given showing all constructions clearly.

R

45

90

45

Q

A

30

D   B

30   30   30

120

90

C