An Roinn Oideachais agus Eolaíochta

S 60 A

A   **JUNIOR CERTIFICATE EXAMINATION, 2002**

TECHNICAL GRAPHICS — ORDINARY LEVEL

THURSDAY 13 JUNE - MORNING, 9.30 — 12.00

TOTAL MARKS 400 (Section 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 in the space provided above 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.
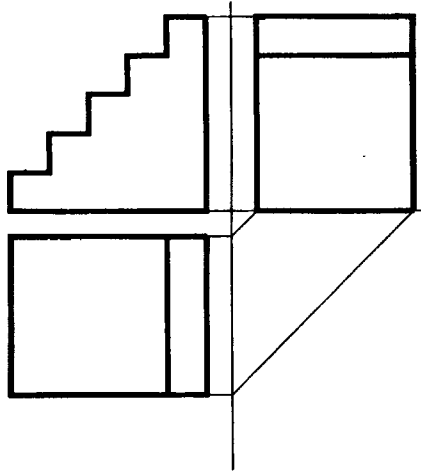
For Examiner's use only	
QUESTION	MARK
Section A (Total)	
Section B Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
TOTAL ☞	
GRADE ☞	

1 Shown is the elevation, plan and end view of a set of steps.
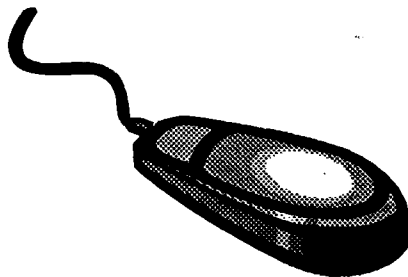Insert the lines omitted in the end view and in the plan.

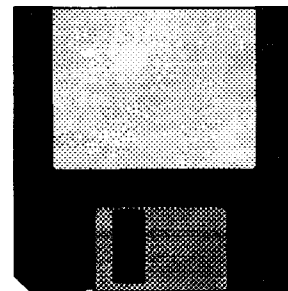**2** Make a freehand pictorial sketch of the blocks in the space provided.
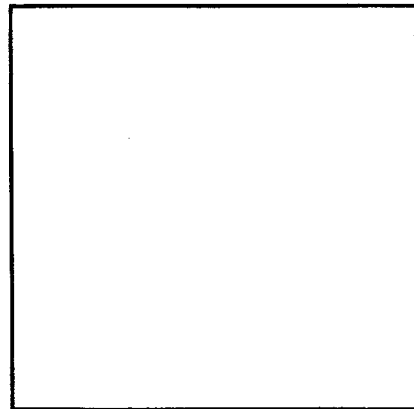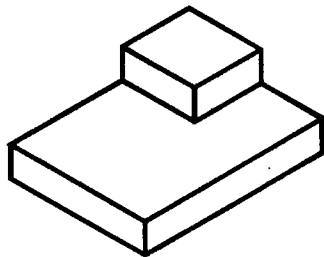
3 Identify the computer components shown at **A** and **B**, below.

A
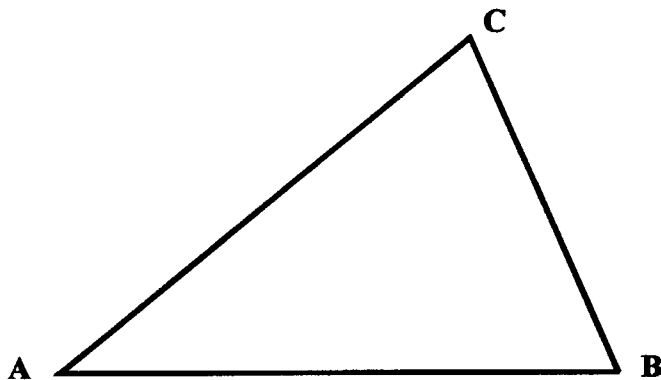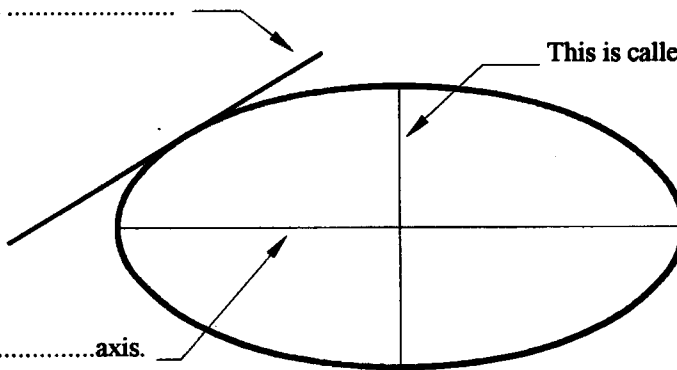
B

A = _____   B = _____

4   Convert the area of the triangle **ABC**, to a **rectangle** of equal area.

C

A   B

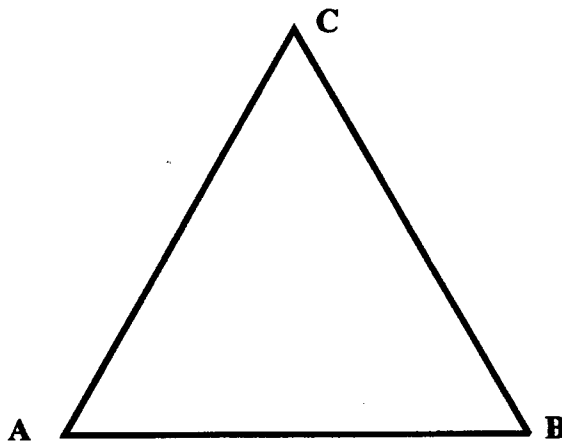**5**   Fill in the missing words in the sentences below.
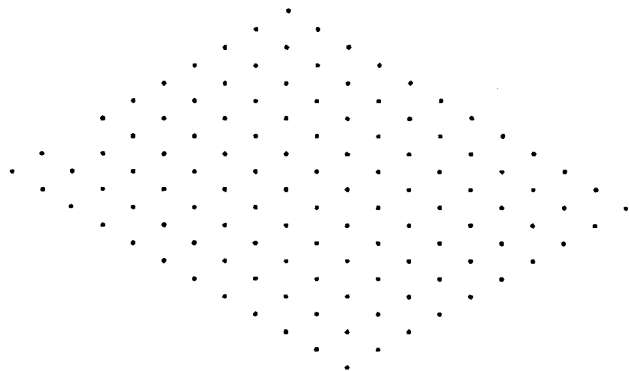
This line is called a ....

This is called the........................axis.

This is called the...................axis.

6   Inscribe a **circle**, to make contact with all sides, in the triangle **ABC**.

C
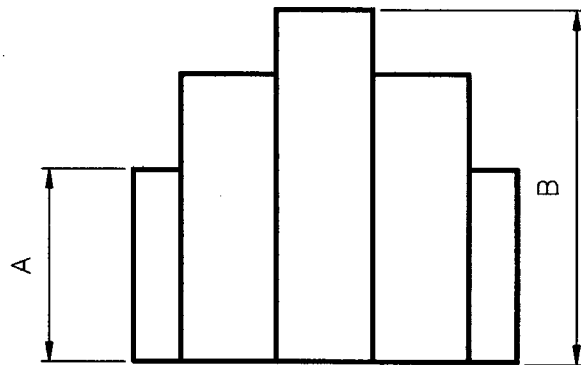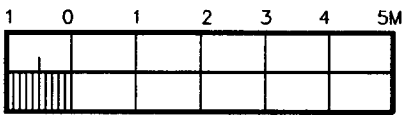
A   B

7   The elevation and plan of a **tent** are shown.
Draw an isometric view of the tent, on the grid provided.
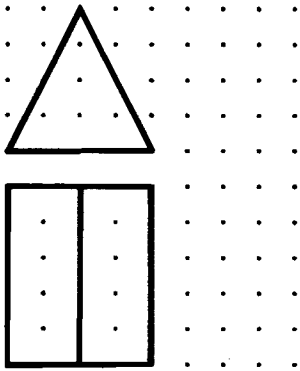
8   Using the scale provided, measure and record the dimensions A and B.

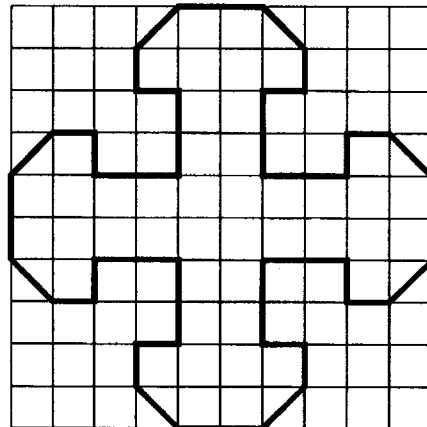1   0   1   2   3   4   5M

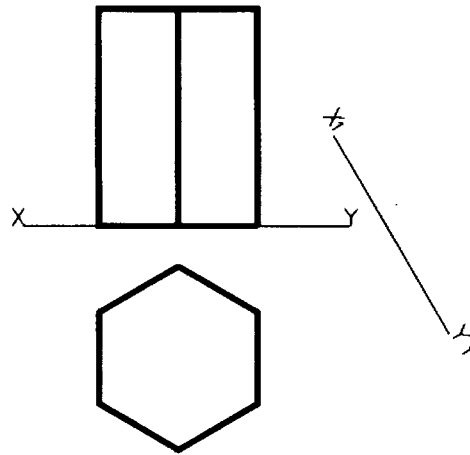A = _____   B = _____

9   Record the area of the figure in square units.
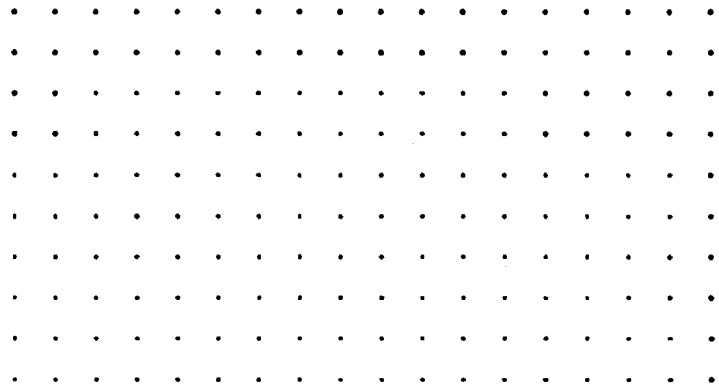
Note: 1 square = 1 x 1 Unit.

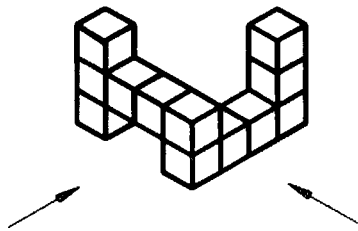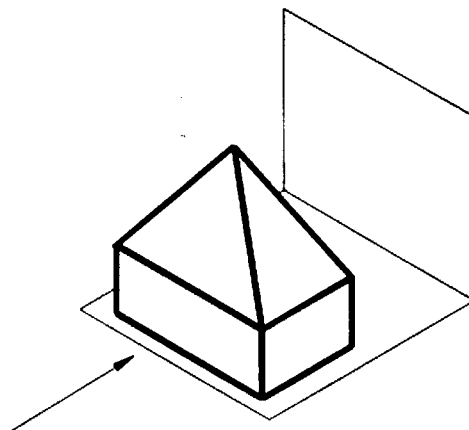Area = _____

10 The elevation and plan of a hexagonal based prism are shown. Project an **auxiliary elevation**, on the given X₁ — Y₁ line.

11 Using the grid provided, **sketch** the orthographic views indicated by the arrows.

12 Sketch the **shadow** cast by the solid when the light source is as indicated by the arrow.

13 Construct an **arc**, of radius **25mm**, tangential to circles **A** and **B**. Show clearly all constructions and points of contact.

A

B
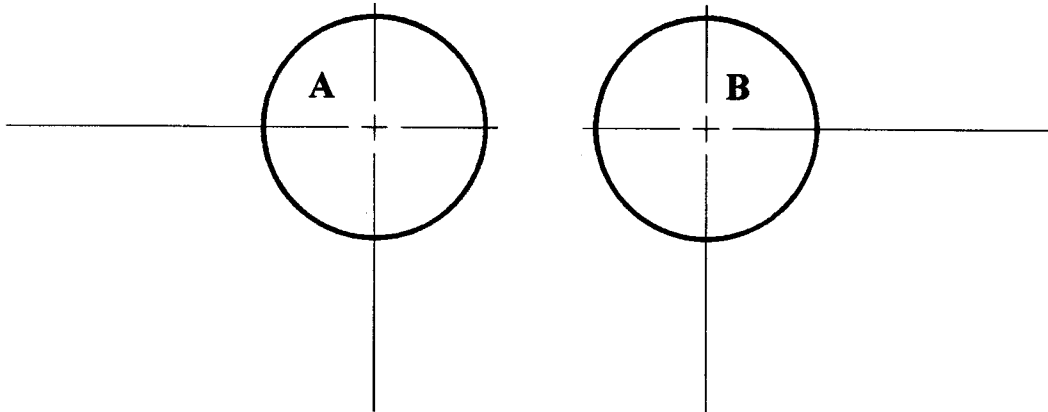
14 The figure shows the incomplete two point perspective outline of a bracket. Complete the perspective outline, similar to the view shown at **A**.

A
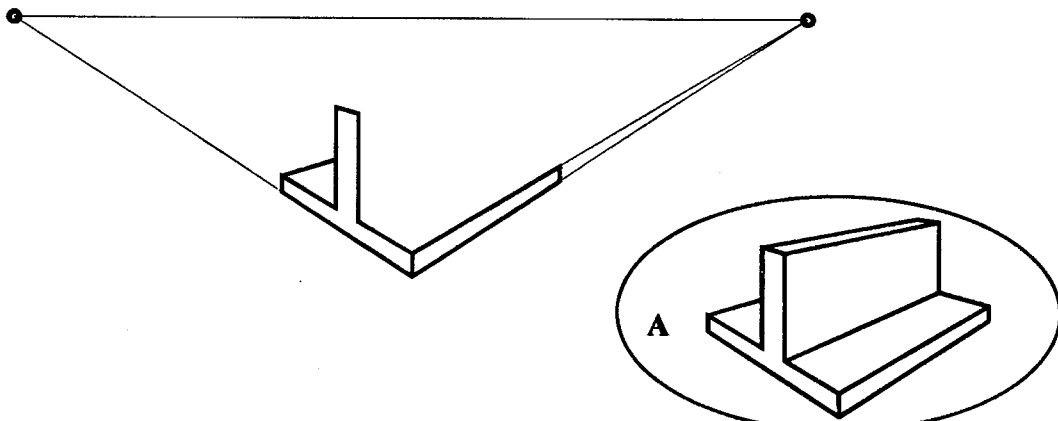
15 Rotate the mallet clockwise through 60°, about centre, **O**.

O

09870

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S 60 B

B

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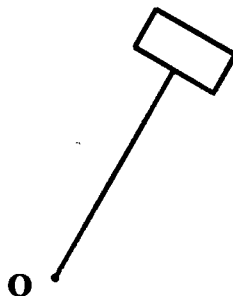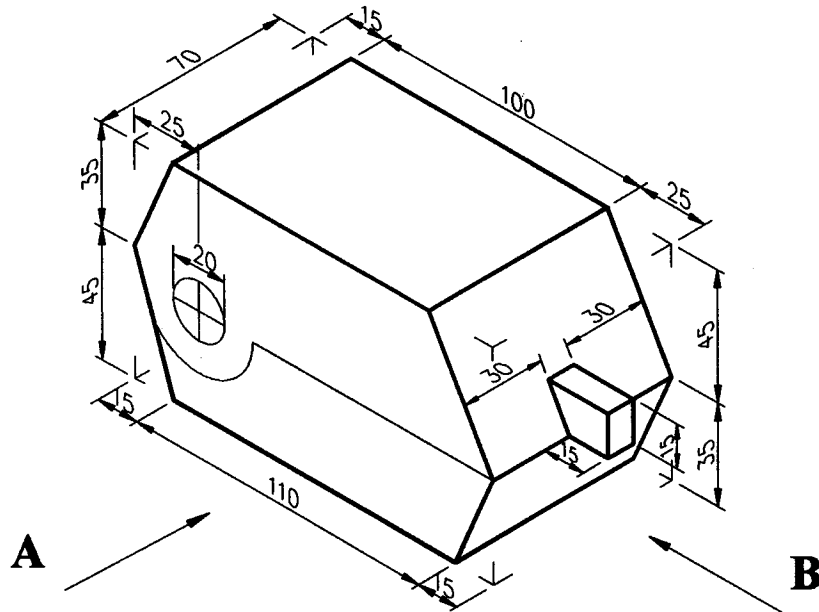

SECTION B — 280 MARKS

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.**

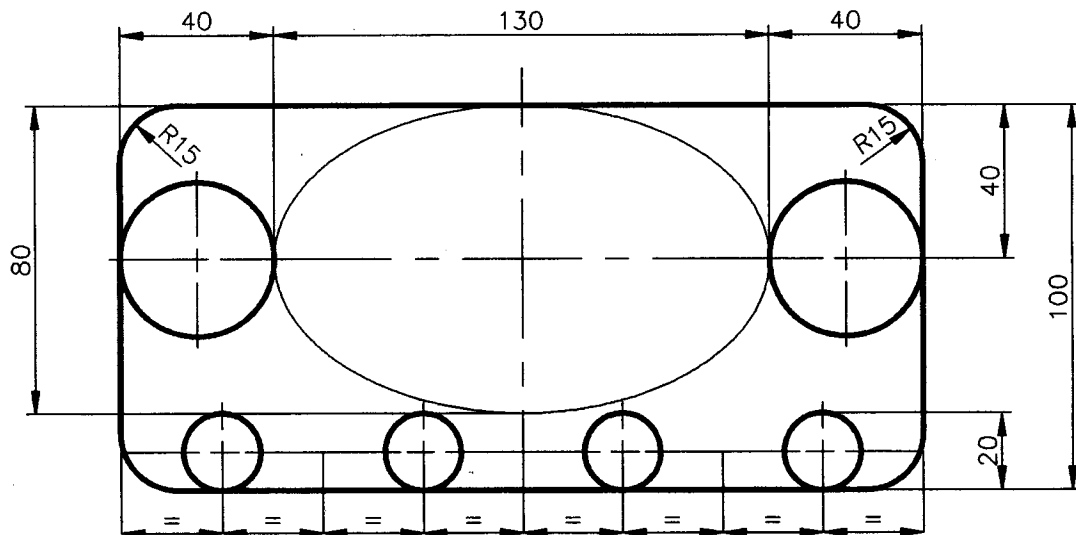(e) **Examination number must be distinctly marked on each sheet of paper used.**

1

The figure shows the outline of a **computer diskette storage box.**
Draw :-
(a) A front elevation looking in the direction of arrow **A**.
(b) An end elevation looking in the direction of arrow **B**.
(c) A plan projected from the front elevation.
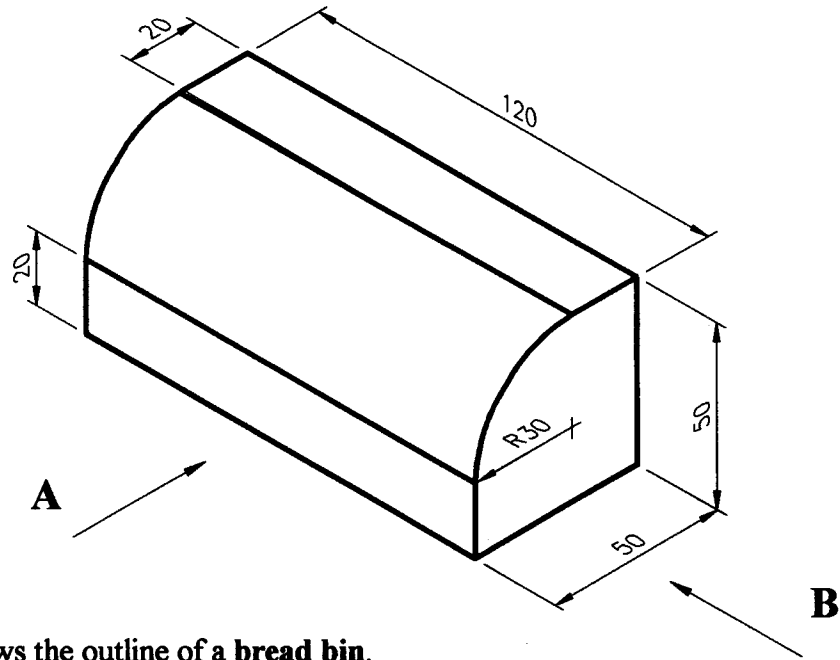Insert any **four** dimensions.

2

The figure shows the design of a **car stereo** containing an ellipse, with major and minor axes 130 and 80 respectively.
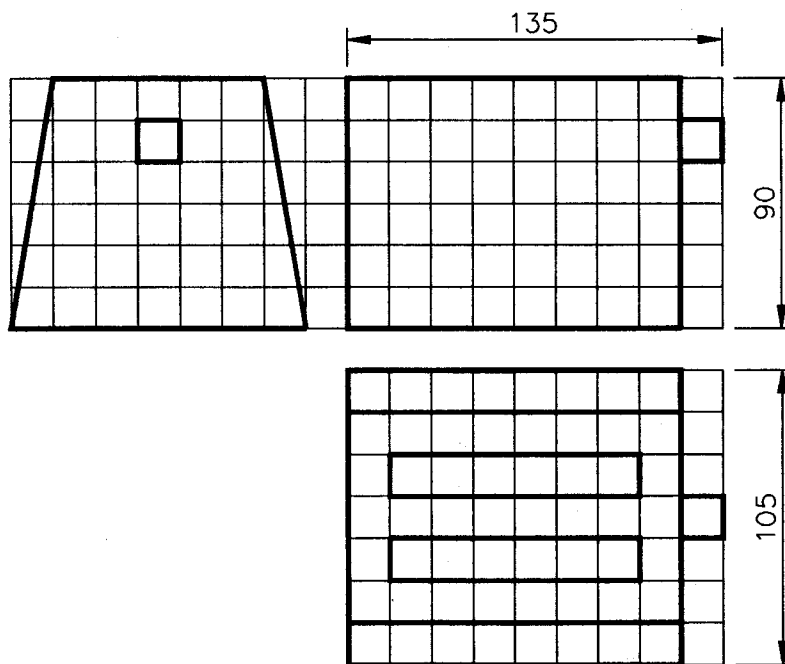Draw the given design showing clearly all construction lines.

3

The figure shows the outline of a **bread bin**.

Draw the following views :-

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

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

(c) The complete **surface development** of the bread bin.

4

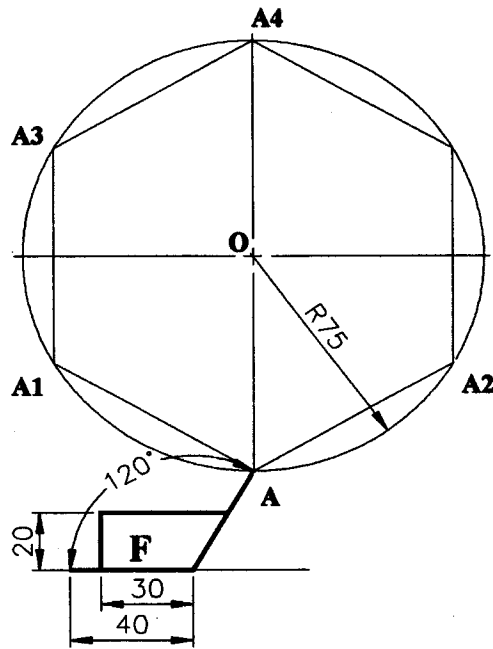The elevation, plan and end view of a **toaster** are shown. The grid is made up of 15mm squares.

Draw **one** of the following views:-

(a) An **isometric** view   **or**   **(b)** An **oblique** view of the toaster.

Note: The solution must be presented on standard drawing paper.

5

A4

A3

O

R75

A1

A2

120°

A

20

F

30

40

Draw the outline of the **hexagon** and then the figure **F** as shown.

Locate the points A, A1, A2, A3, A4, and the centre O.

Find the image of the given figure F under the following transformations :-

(a) From point A to A1 by a **translation,**

(b) From point A1 to A2 by an **axial symmetry** in the line A – A4,

(c) From point A2 to A3 by a **central symmetry** in the point O.

6

75

50

R75

70

25

20

R20

R15

R80

R10

R20

R15

10

20

R75
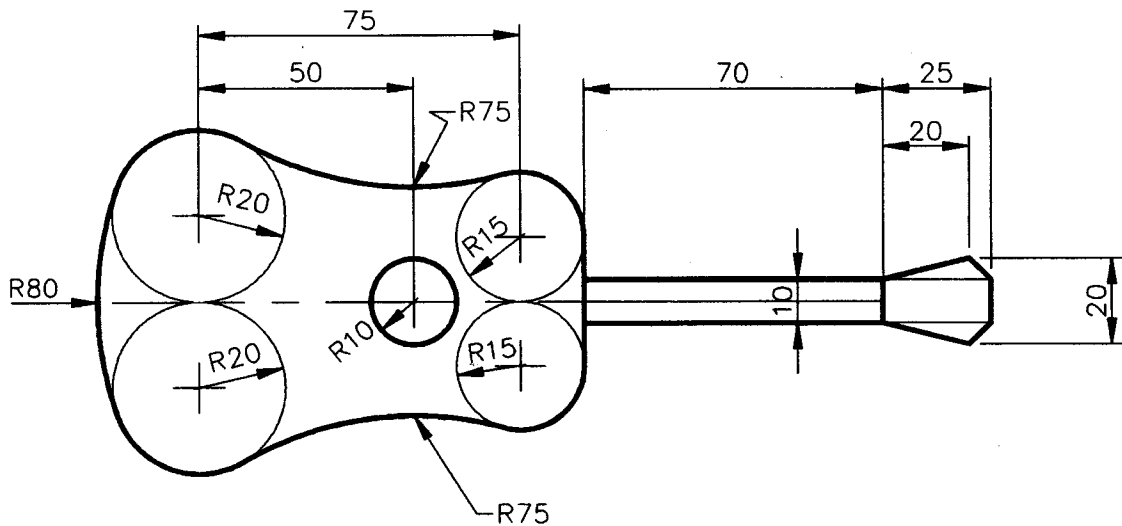
A design for a **guitar** is shown.

Draw the given design, showing clearly all constructions and points of contact.