STAPLE HERE

FOR OFFICIAL USE

X033/301

NATIONAL QUALIFICATIONS 2010

THURSDAY, 27 MAY
9.00 AM – 12.00 NOON

GRAPHIC COMMUNICATION HIGHER

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth
Day Month Year

Scottish candidate number

Number of seat

1 **140 Marks are allocated to this paper.** **Section A = 40 marks**
Section B = 100 marks

2 Candidates should attempt **all** questions in **Section A** and are advised to spend approximately 45 minutes on this section. A supplementary page is included at the end of **Section A** for use if extra space is required.

3 Candidates should attempt questions 7a, 7b, 8, 9 and **either** question 10a, 10b **or** question 11 in **Section B**.

4 Read each question carefully before you answer.

5 Written answers may be in **ink** or **pencil**.

6 Drawings and sketches **must be in pencil**.

7 Dimensions are given in millimetres or as stated.

8 Orthographic drawings are in third angle projection.

9 **At the end of the examination**

check that your name is on every sheet;
put the sheets in correct numerical order;
place this sheet on top of the others;
join all sheets together by stapling at the top left-hand corner;
before leaving the examination room, you must give these sheets to the Invigilator (if you do not you may lose all the marks for this paper).

Question	Marks
1	
2	
3	
4	
5	
6	
Section A Total	

	Question	Marks
	7a	
	7b	
	8	
	9	
EITHER	10a	
	10b	
OR	11	
	Section B Total	

Total Marks A + B	

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A supplementary page is included at the end of Section A for use if extra space is required.

Marks

1 (*a*) Explain clearly what each of the following CAD commands allows the user to do. Sketches may be used to help explain your answers.

(i) Scale .....

.....

(ii) Zoom .....

.....

(iii) Mirror .....

.....

(iv) Pan .....

.....

(v) Rotate .....

.....

(vi) Library .....

.....

(vii) Grid lock/snap .....

.....

(viii) Copy .....

.....

8

(*b*) Explain the operation in relation to paper and pen movement of the following two output devices.

(i) Drum plotter .....

.....

(ii) Flatbed plotter .....

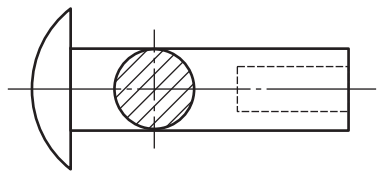
..... **2**

(10)

Marks

2 (*a*) State the type of sectional view shown below.

(i)



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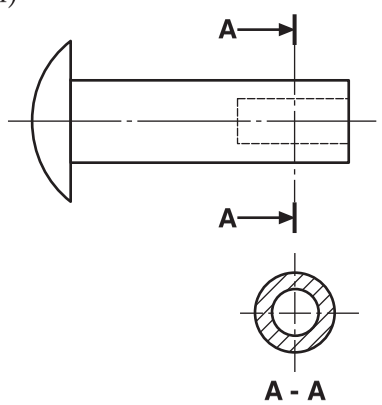
(ii)



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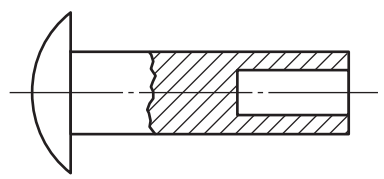
(iii)



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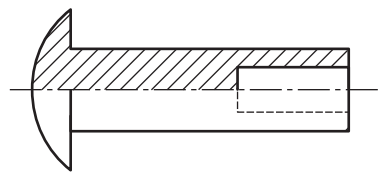
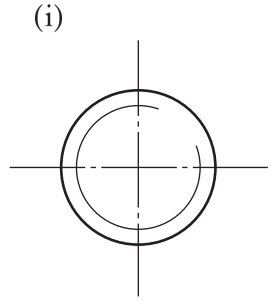
(iv)



..... **4**

(*b*) State what each of the British Standards conventions shown below represent.

(i)



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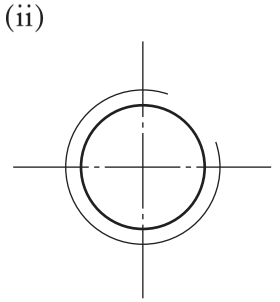
(ii)

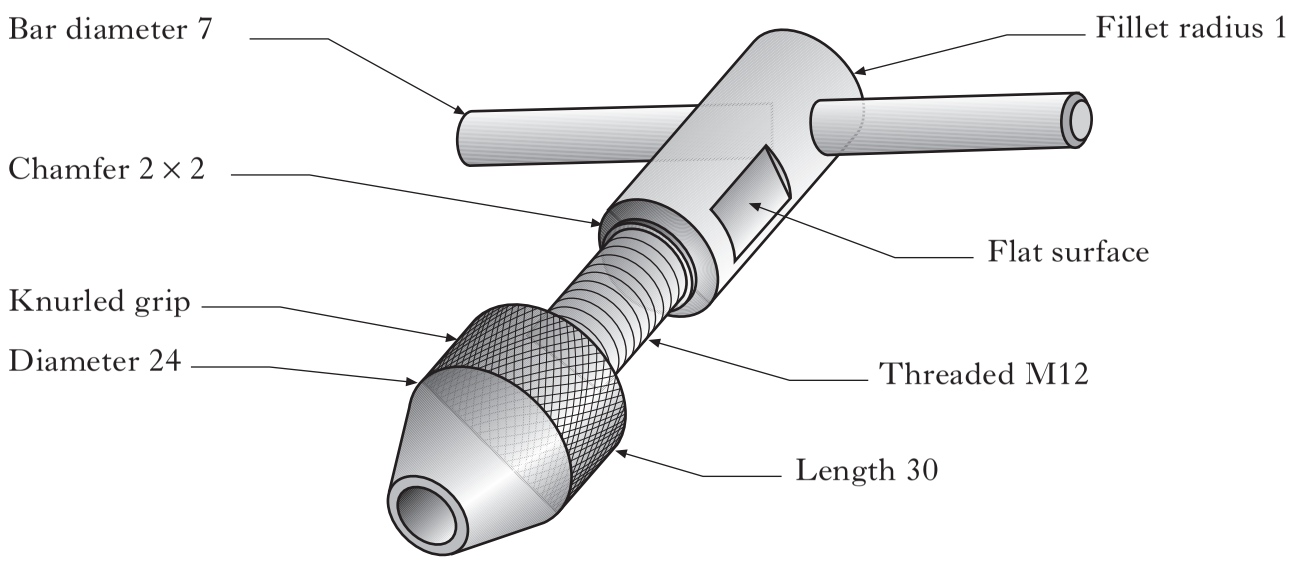


..... **2**

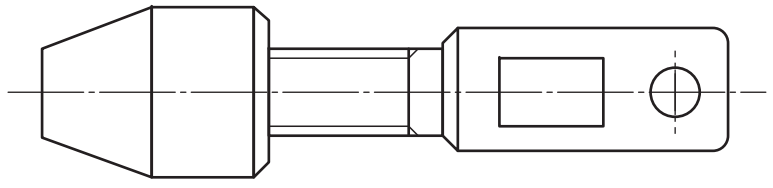
(6)

Candidate's Name _____

3 A pictorial view of a tap wrench is shown. Six sizes are given. *Marks*



(*a*) Sketch to British Standards conventions, the six given sizes on the orthographic view below.



6

(*b*) Sketch, on the orthographic view above, the British Standards convention to indicate:

(i) the flat surface on the barrel;

(ii) the knurled pattern on the chuck. **2**

(8)

4 An example of a desktop published (DTP) safety leaflet is shown. *Marks*

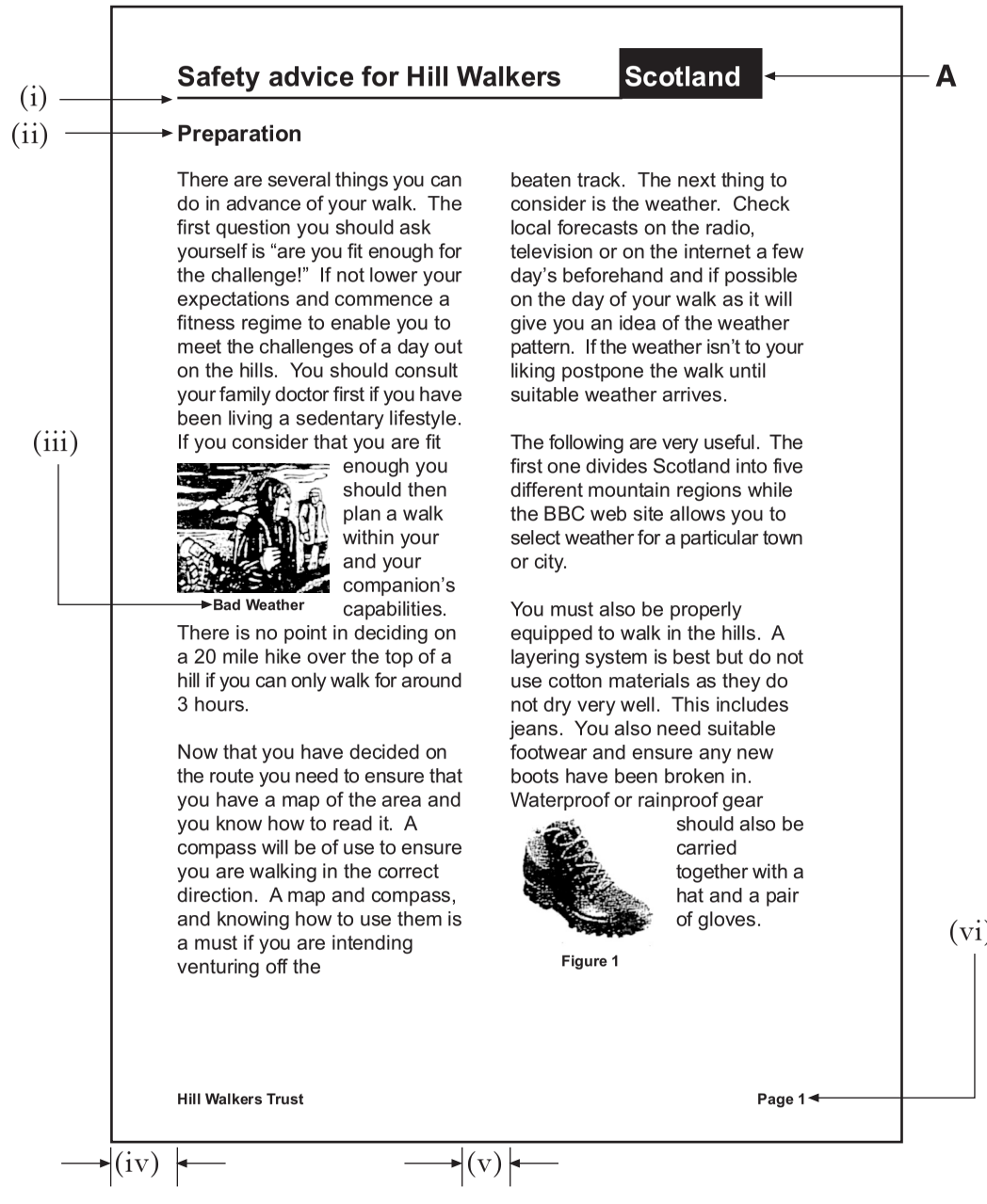
(*a*) State the desktop publishing effect indicated at **A**.

..... **1**

(*b*) State the page orientation of the leaflet below.

..... **1**

(*c*) State the desktop publishing terms for each of the features (i) to (vi).



(i) ..... (ii) .....

(iii) ..... (iv) .....

(v) ..... (vi) **6**

(8)

5 Some of the many different types of graphics used in the construction industry are shown below. *Marks*

Describe the purpose and state a suitable scale for each of the plans.

(*a*) Floor plan

Scale .....

Description .....

..... **2**

(*b*) Site plan

Scale .....

Description .....

..... **2**

(*c*) Block plan

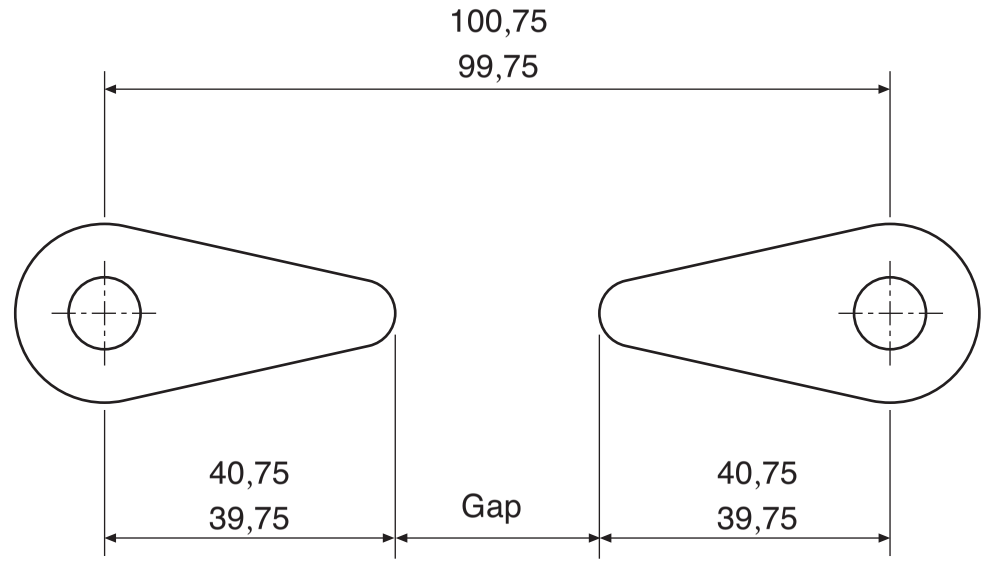
Scale .....

Description .....

..... **2**

(6)

6 *Marks*



The paddles from a pinball game are shown. The paddles are set at a nominal 100 mm apart centre to centre.

The distance between the pivot centre and the end of the paddle is 40 mm with a tolerance of +0·75 and –0·25 applied.

Calculate the maximam and minimum gap between the paddles.
(Show all relevant calculations.)

(2)

Candidate's Name _____

SUPPLEMENTARY PAGE

Use this page if extra space is required for answers to Questions 1 to 6.

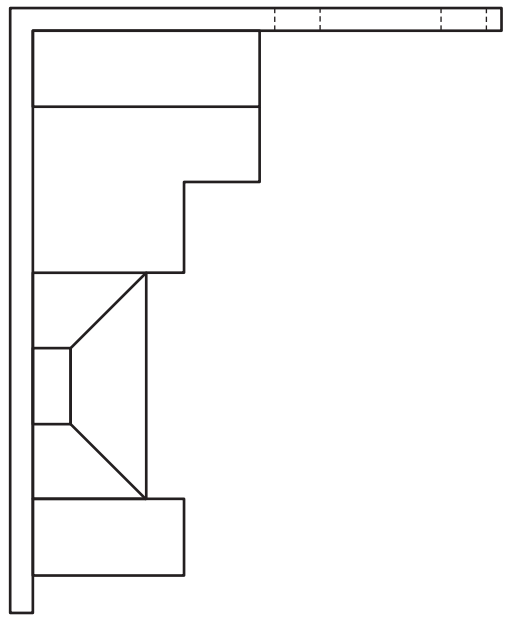
Number each answer clearly.

7a An elevation and plan of part of a kitchen are given.

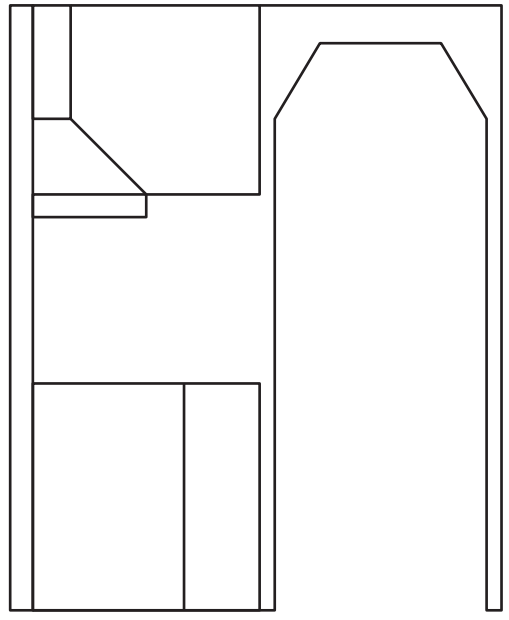
Draw a measured 2-point perspective of the kitchen.

The spectator point (SP), plane of projection (PP), ground level (GL), eye level (EL) are given.

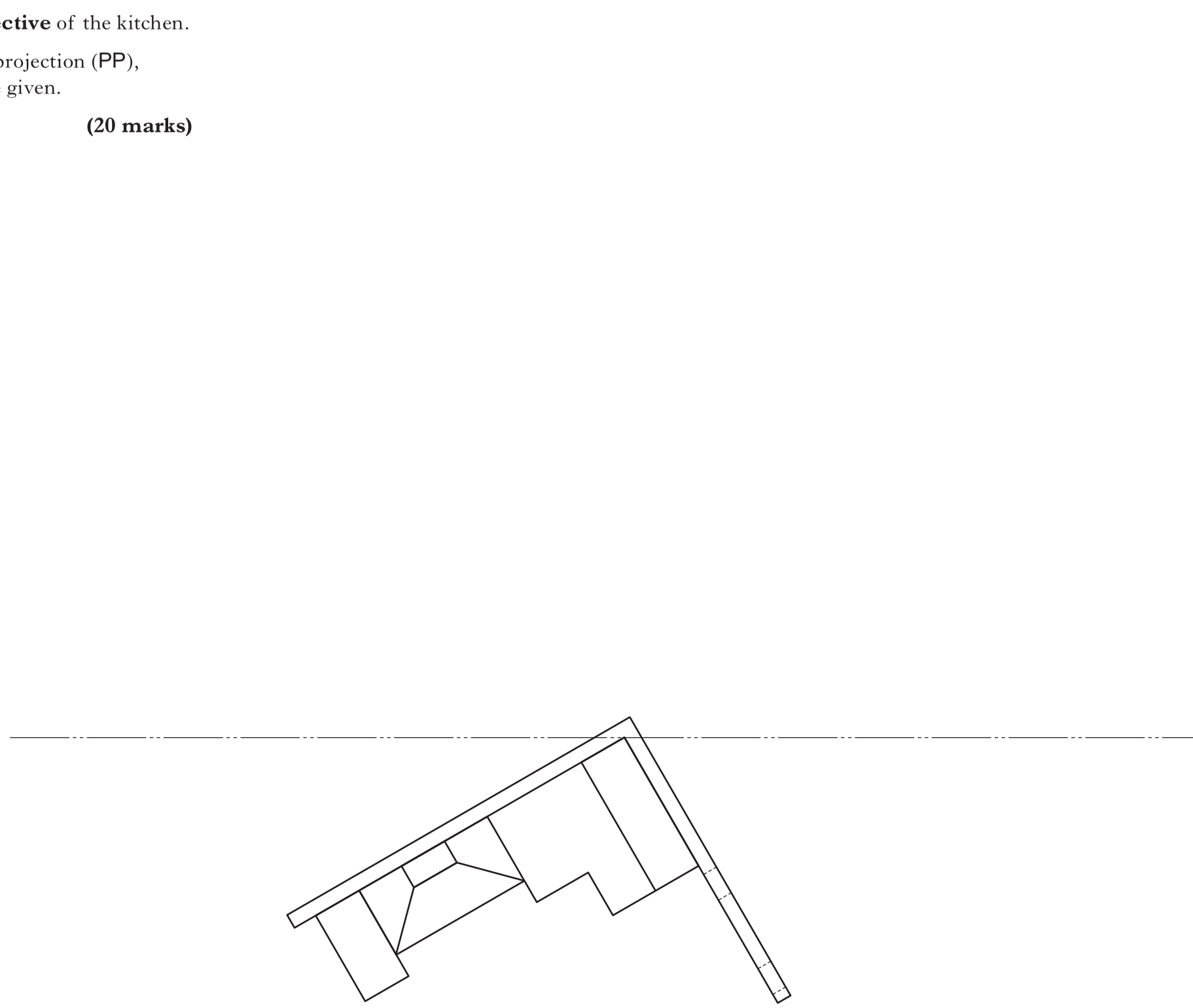
Do not show hidden detail. **(20 marks)**



PLAN



ELEVATION



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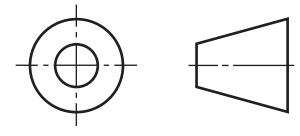


Candidate's Name _____

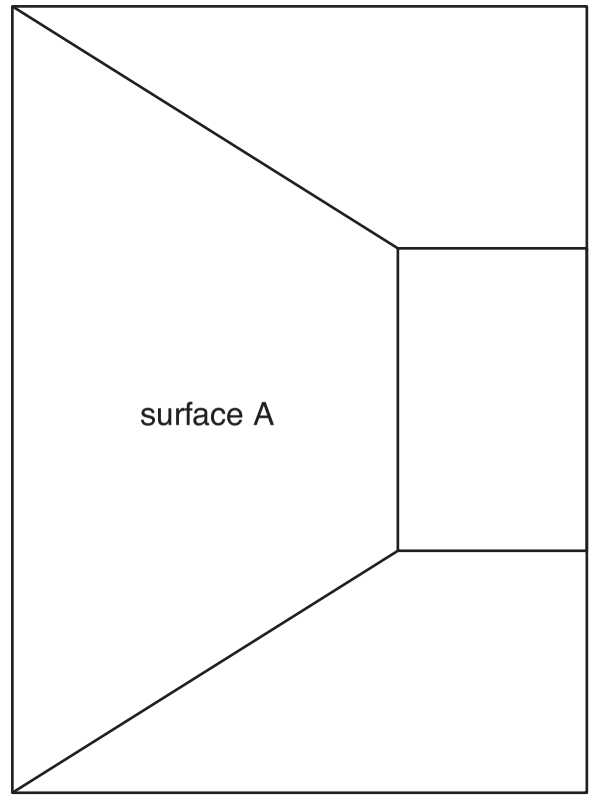
Section B

7b

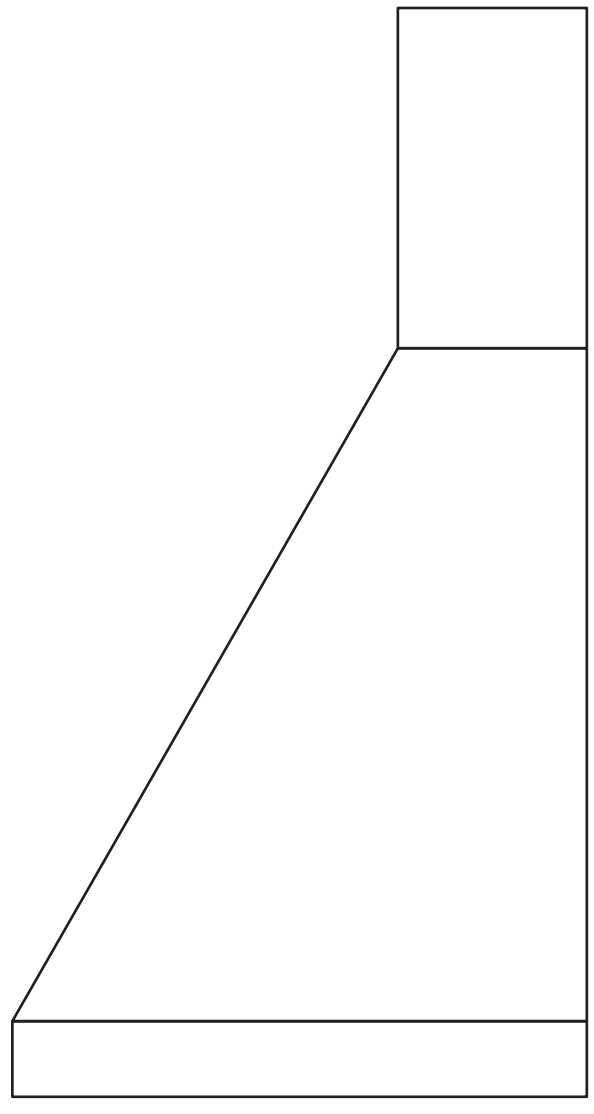
The elevation and plan of a cooker hood are given.

Draw an auxiliary plan of the cooker hood showing the true shape of surface A.

Show all hidden detail. **(10 marks)**

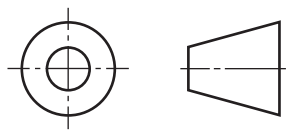


PLAN



ELEVATION

AUXILIARY PLAN



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8

Section B

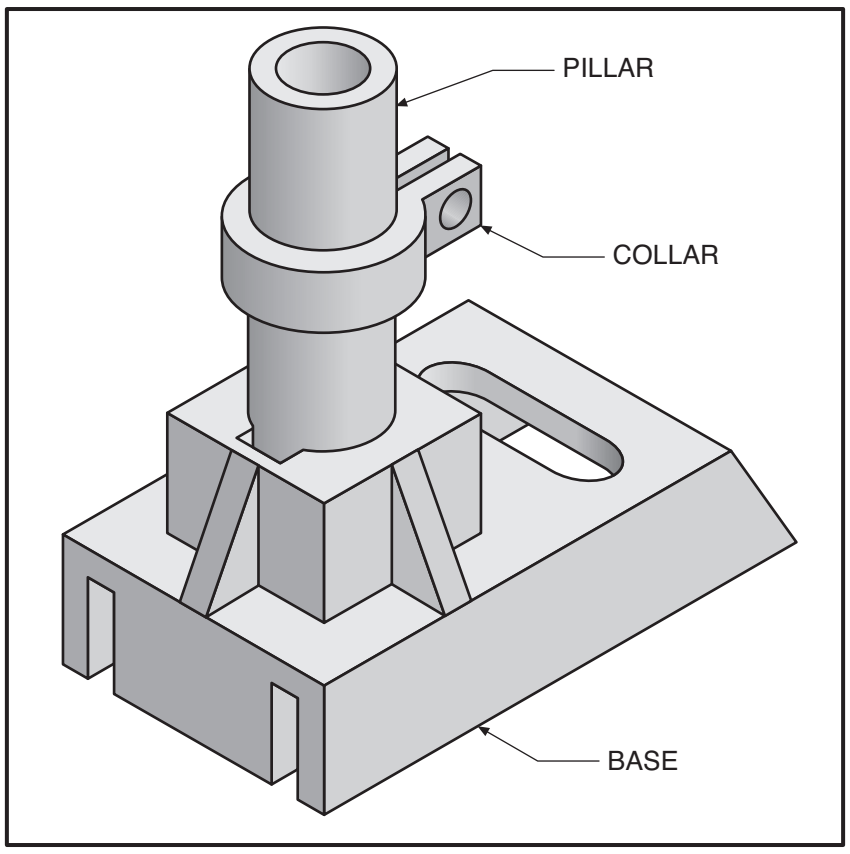
The plan and elevation of three parts of a drilling table are shown.

A pictorial view of the assembled parts is also shown.

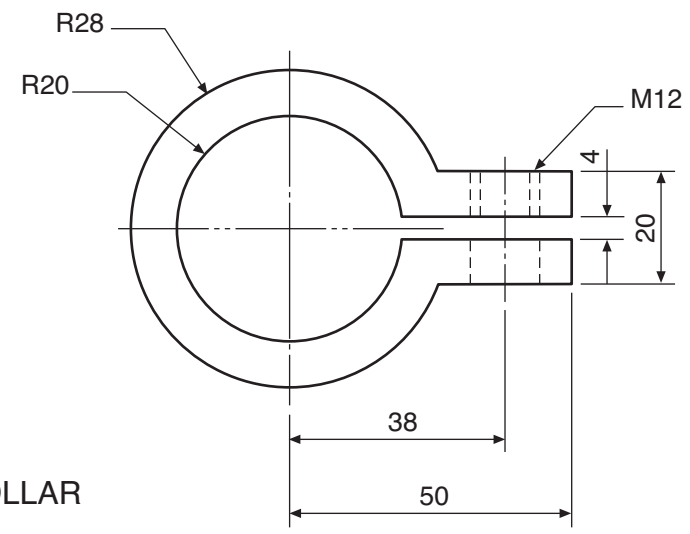
Draw in the positions indicated on the **WORKSHEET** on the following page:

(*a*) The end elevation of the assembled parts.
(The top surface of the collar has to be positioned 50 mm from the top of the pillar.)
Show all hidden detail.

(*b*) A sectional elevation **A-A** of the assembled components.
(The top surface of the collar has to be positioned 50 mm from the top of the pillar.)
Do not show hidden detail. **(30 marks)**

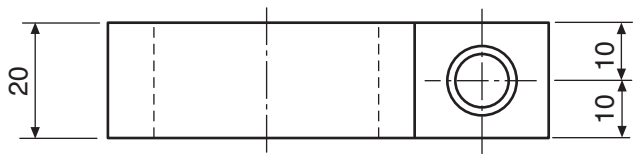


PICTORIAL VIEW OF THE ASSEMBLED PARTS

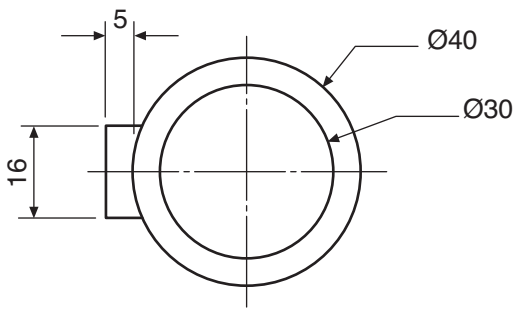


COLLAR

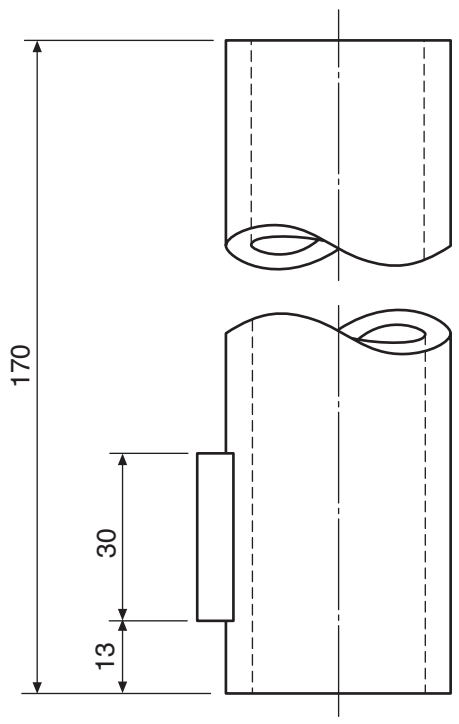
PLAN



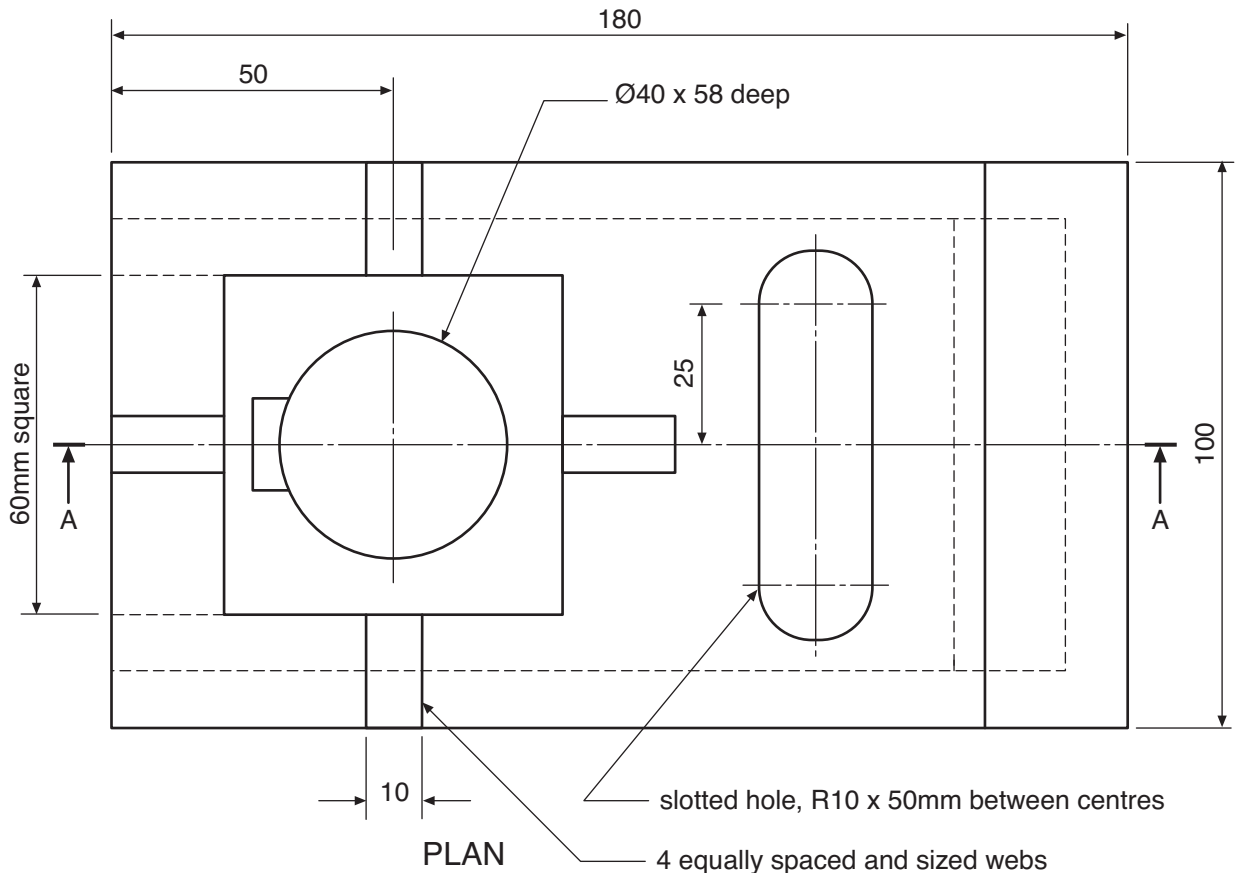
ELEVATION



PILLAR PLAN

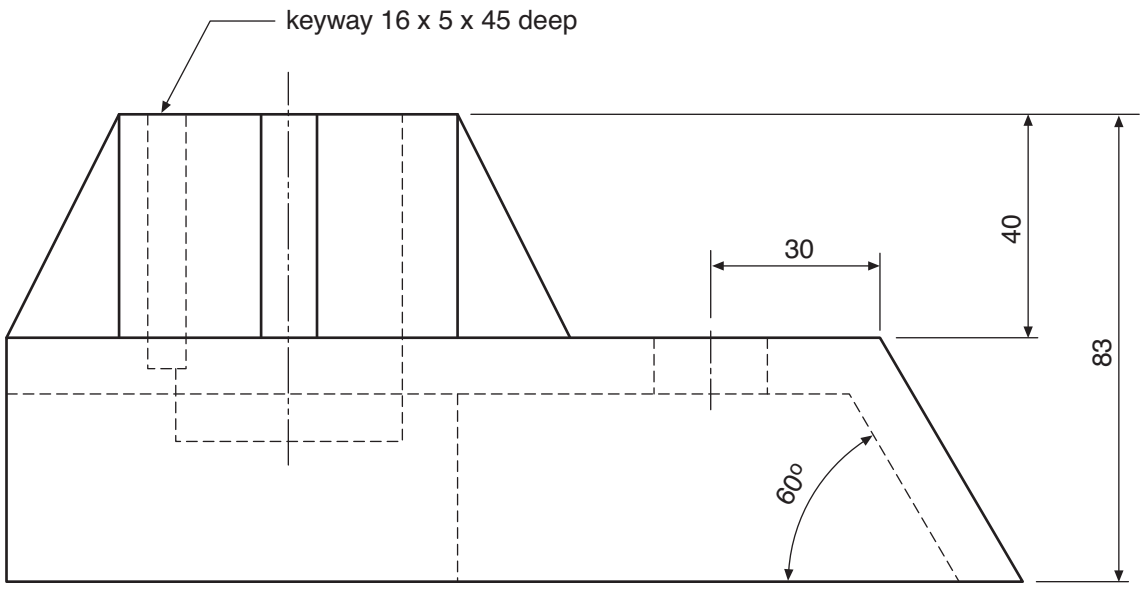


ELEVATION



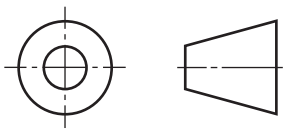
PLAN

BASE



ELEVATION

NOTE: wall thickness throughout drill base, 10 mm



NOT TO SCALE

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WORKSHEET FOR QUESTION 8

Section B

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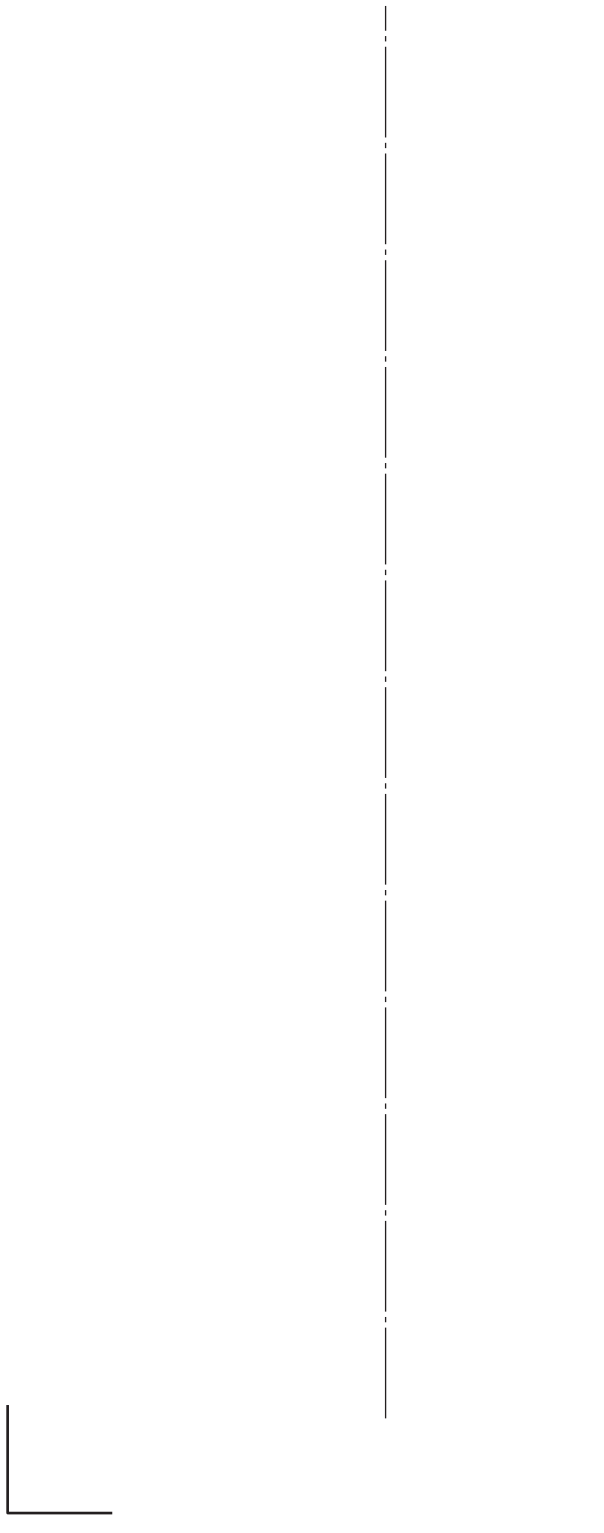

SECTIONAL ELEVATION **A-A**

END ELEVATION

Candidate's Name _____

The auxiliary plan, incomplete elevation and incomplete plan of a junction of a cylinder and square pipe are given.

Draw, to the same scale:

(*a*) the completed plan;

(*b*) the completed elevation showing all lines of intersection;

(*c*) the half development of the square pipe from **A** to **B**.

Ignore the thickness of the material. **(20 marks)**

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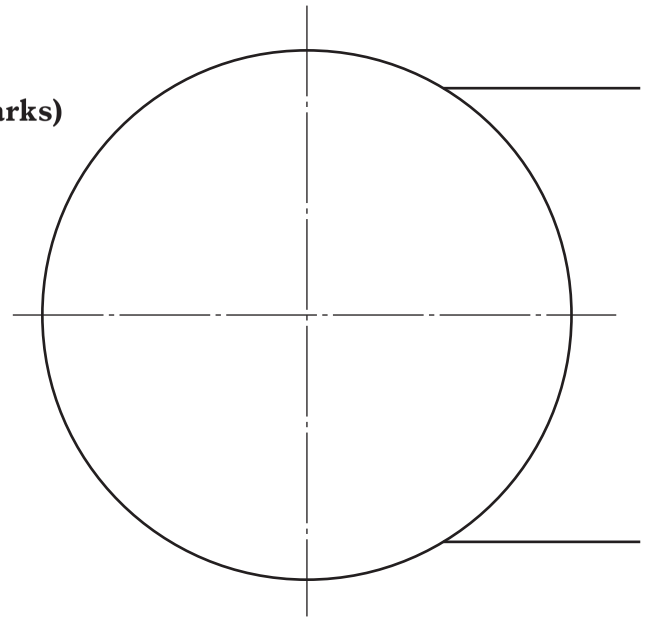
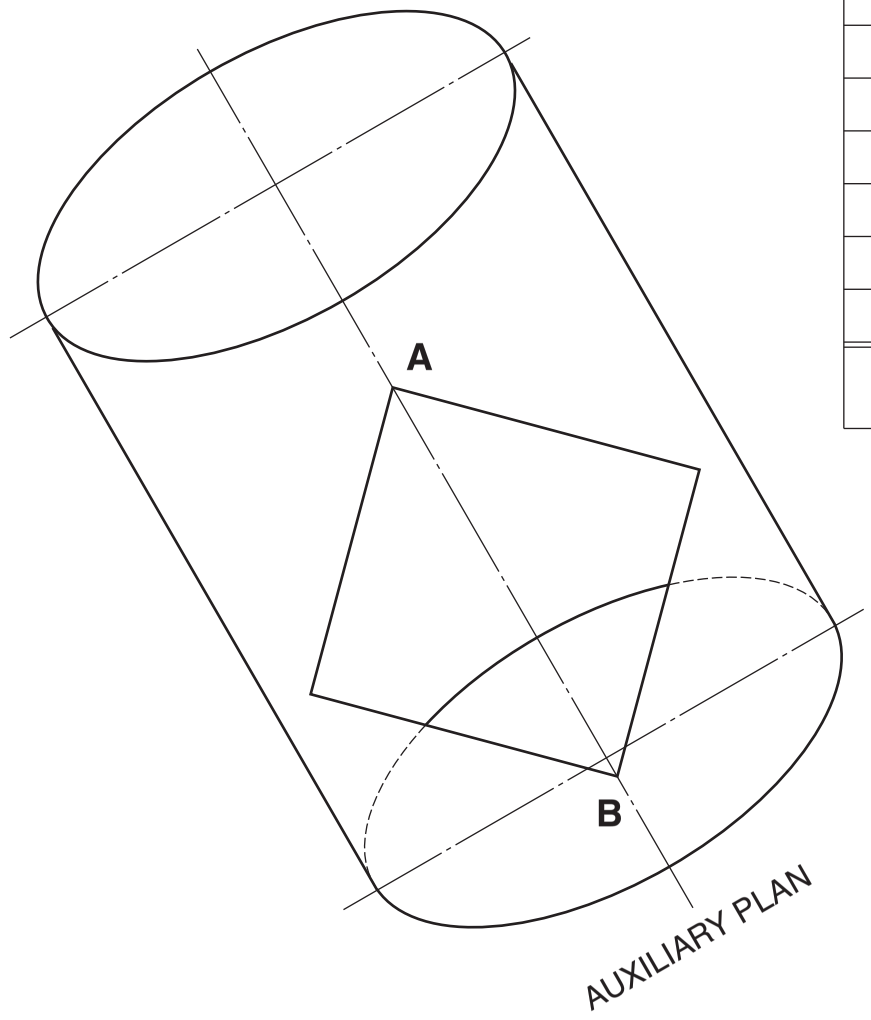
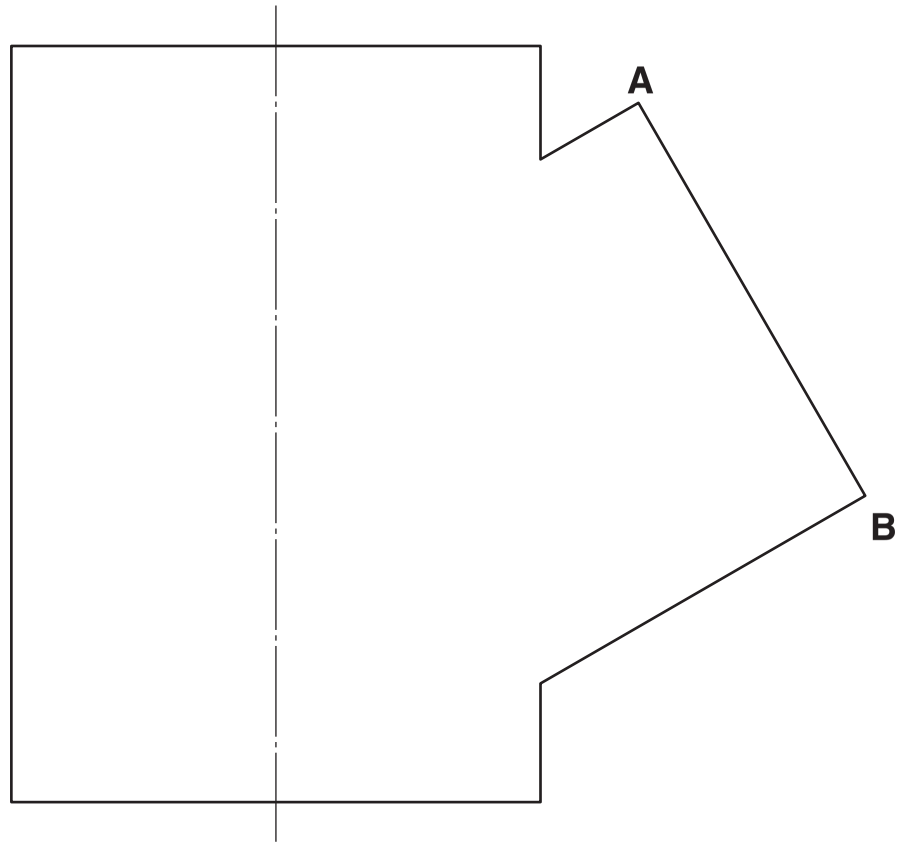


PLAN

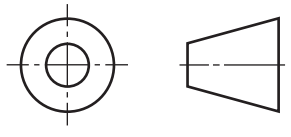


AUXILIARY PLAN



ELEVATION

HALF DEVELOPMENT



Candidates should attempt EITHER Question 10a and b OR Question 11

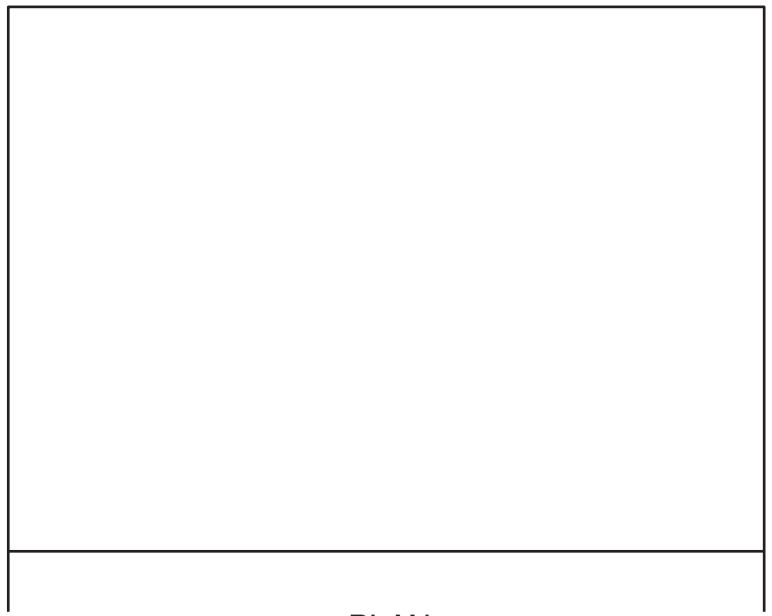
Three views of a child's seat are given.

Draw a cabinet oblique view of the seat using the given start.

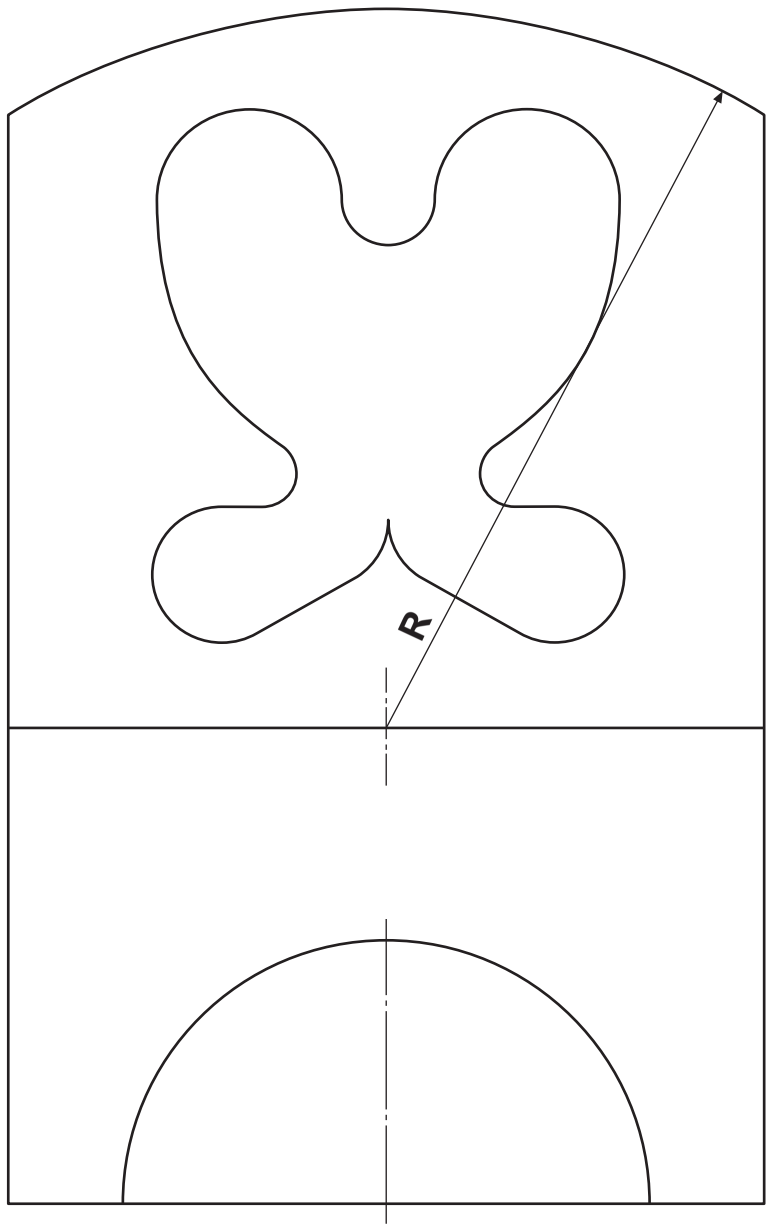
Do not show hidden detail.

Lines at 45° should be drawn half full size.

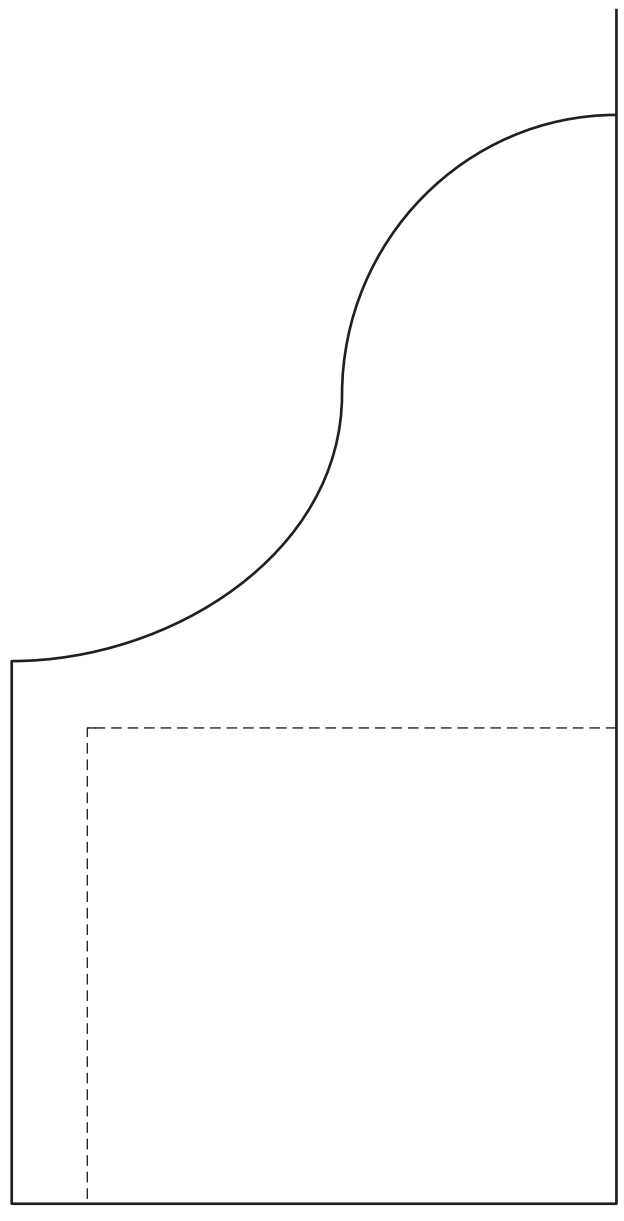
Ignore the thickness of the material. **(10 marks)**



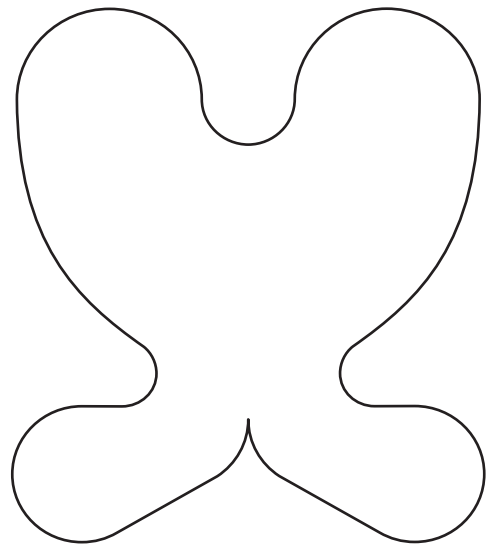
PLAN



ELEVATION



END ELEVATION



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Candidate's Name _____

Candidates should attempt EITHER Question 10a and b OR Question 11

Section B

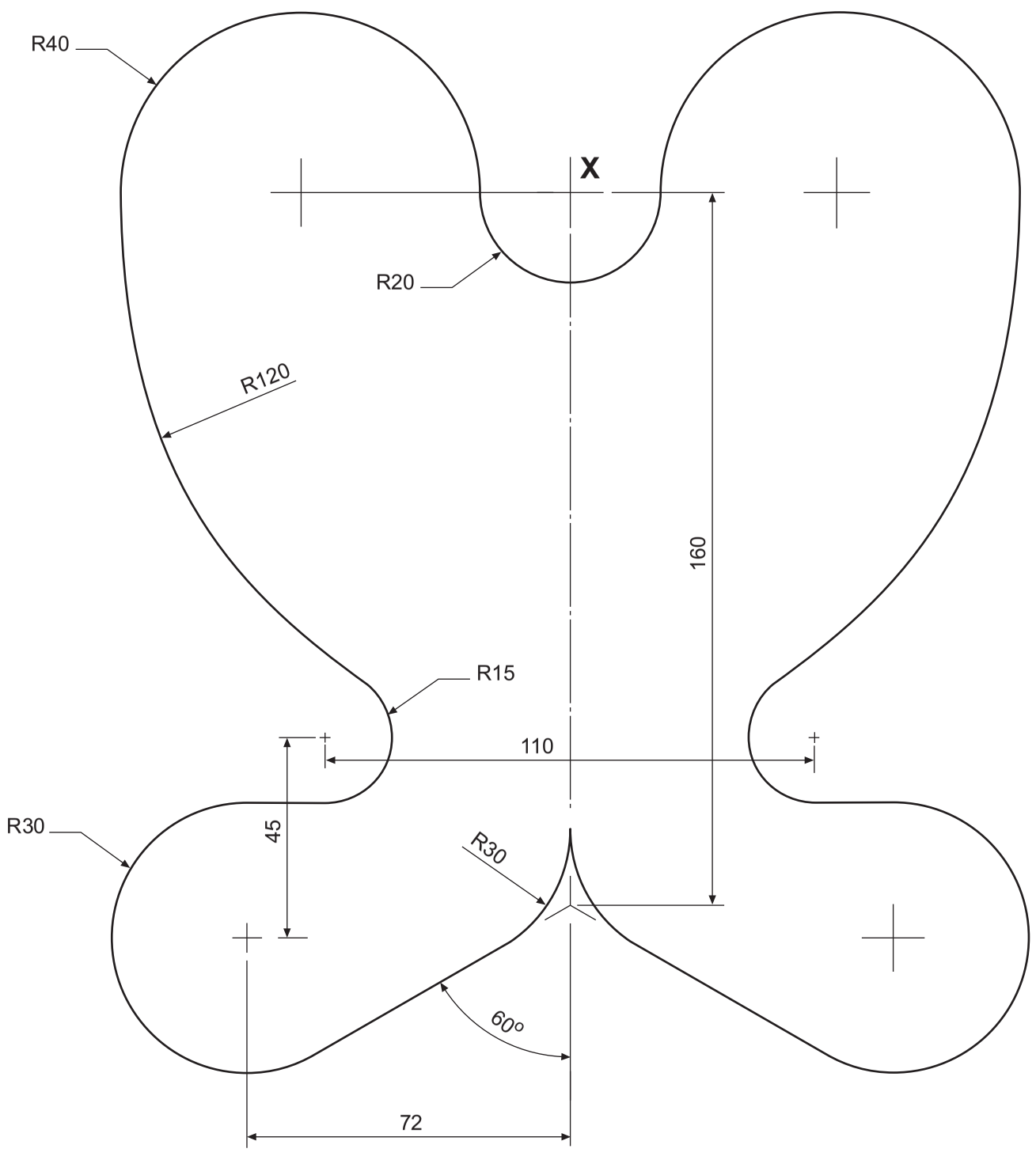
10b

A sketch of the design for the back of the child's seat is shown, not to scale.

Draw full size using the given start **X**, the symmetrical left half of the design.

Show clearly the centres used to draw all the arcs.

Do not show dimensions. **(10 marks)**



NOT TO SCALE

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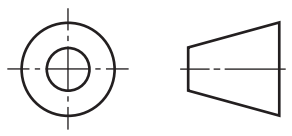


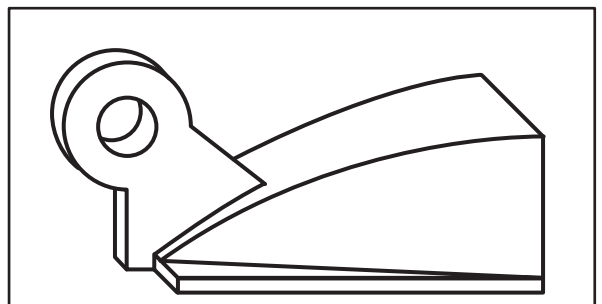
11 **Section B** **11**

The elevation and plan of part of a cross trainer exercise machine, along with a pictorial view are given.

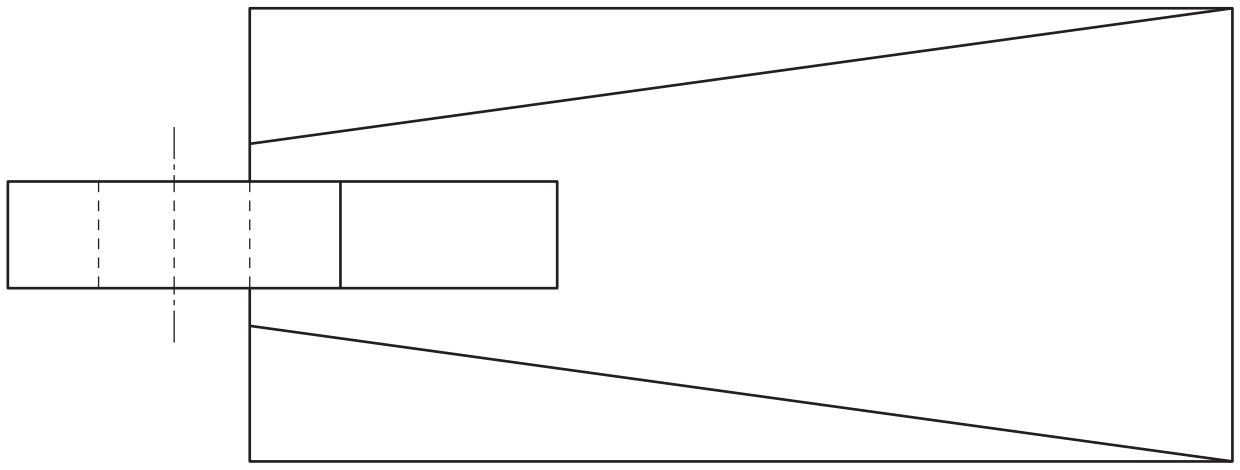
Draw, an isometric view of the cross trainer part.

(Use the given start O)

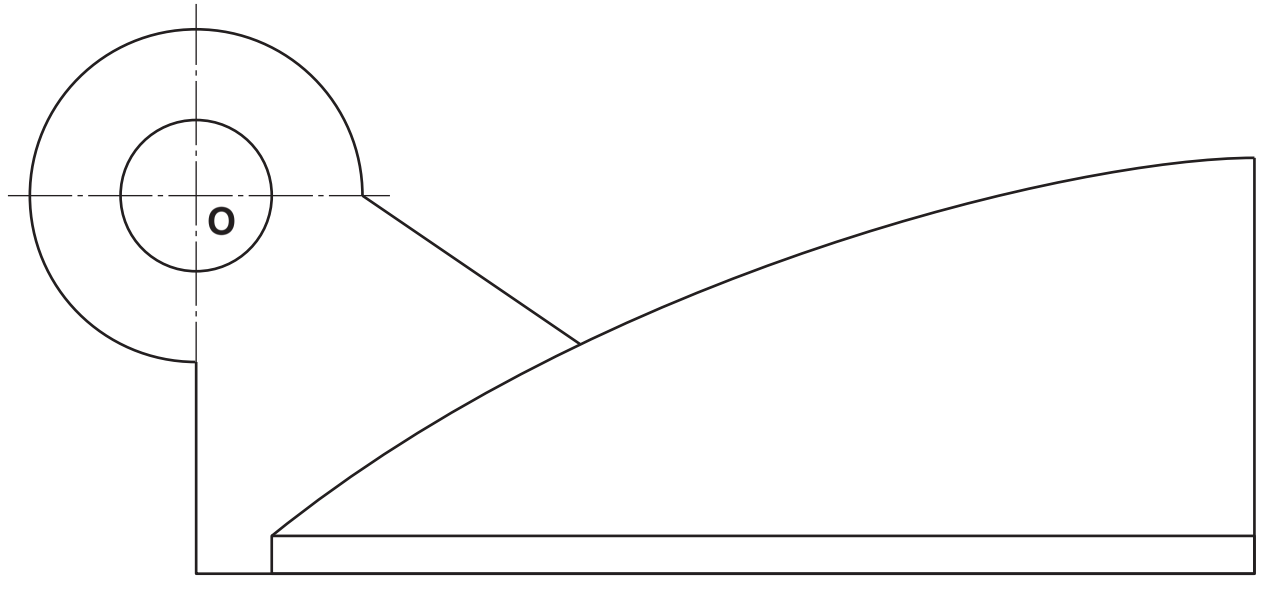
Do not show hidden detail. **(20 marks)**



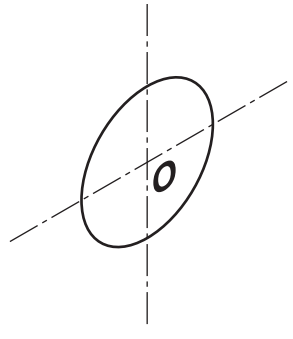
PICTORIAL VIEW



PLAN



ELEVATION



ISOMETRIC

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[END OF QUESTION PAPER]

Candidate's Name _____

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