

STAPLE HERE

FOR OFFICIAL USE

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## X033/12/01

NATIONAL  
QUALIFICATIONS  
2013

TUESDAY, 21 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 7, 8, 9, 10 and **either** question 11 **or** question 12 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	

7	
8	
9	
10	
11	
12	
Section B Total	

EITHER  
OR

<b>Total Marks A + B</b>	
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**1** A supplementary page is included at the end of Section A for use if extra space is required.

An **engineer's office** uses a range of *Preliminary and Production* graphics. Marks

Explain the purpose of each **type** of graphic and give **one** example of each.

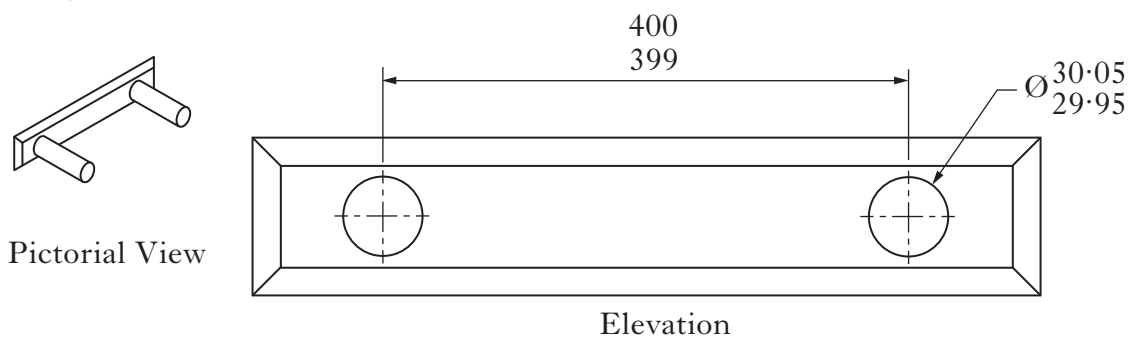
<i>Preliminary</i>	Purpose .....	1
	.....	1
	Example .....	1
<i>Production</i>	Purpose .....	1
	.....	1
	Example .....	1

**(4)**

**2** A pictorial view and elevation of a menu holder are shown below.

The location pins each  $\text{Ø}30$  mm are set apart at 400 mm nominal centres.

There are tolerances on both the **sizes and location** of the pins and these are shown on the drawing below.



(a) Calculate the **maximum** and **minimum** gap between the pins.

Maximum ..... 1

Minimum ..... 1

(b) State **two** reasons why tolerances are an important feature in manufacturing.

Reason 1 ..... 1

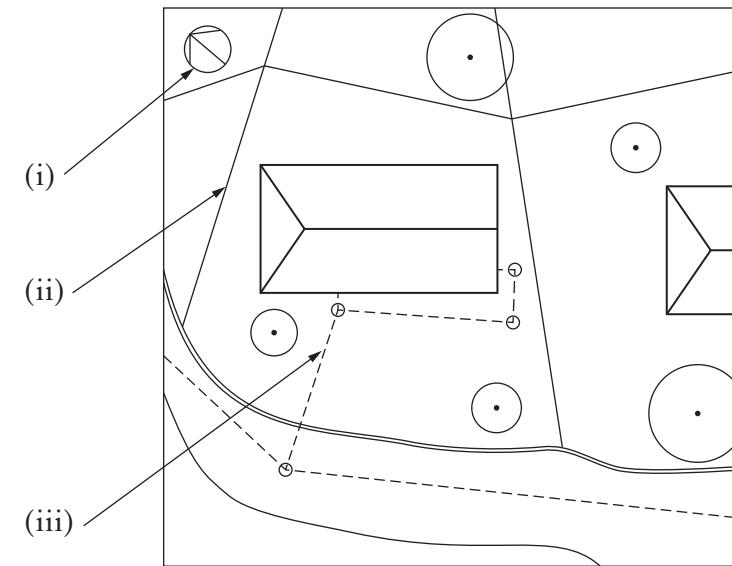
Reason 2 ..... 1

**(4)**

**3**

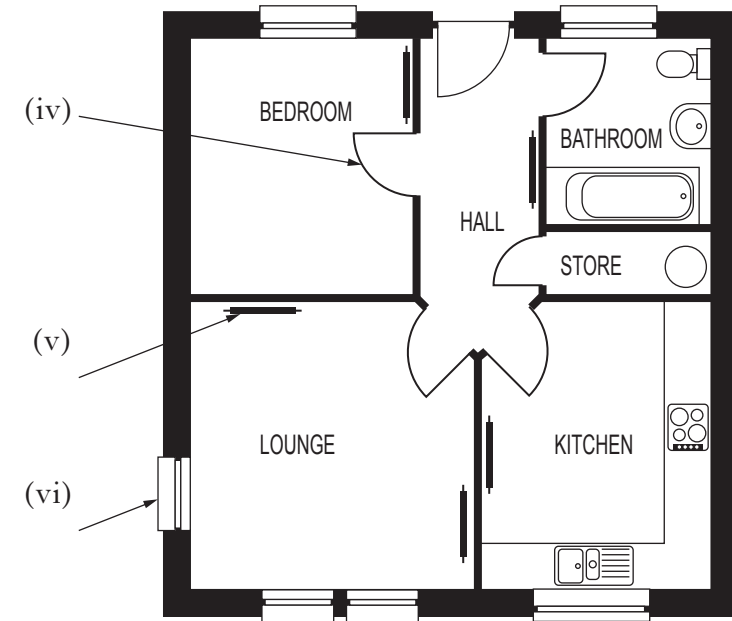
A firm of architects have produced a range of building plans for a new house. Marks

(a) Look at the plans shown below and identify the features indicated.



Site Plan (not to scale)

Site plan	
Feature	
(i) .....	1
(ii) .....	1
(iii) .....	1



Floor Plan (not to scale)

Floor plan	
Feature	
(iv) .....	1
(v) .....	1
(vi) .....	1

(b) For each of the above building plan types, state an appropriate British Standard scale.

*Site plan* scale ..... 1

*Floor plan* scale ..... 1

(c) Name another type of building plan.

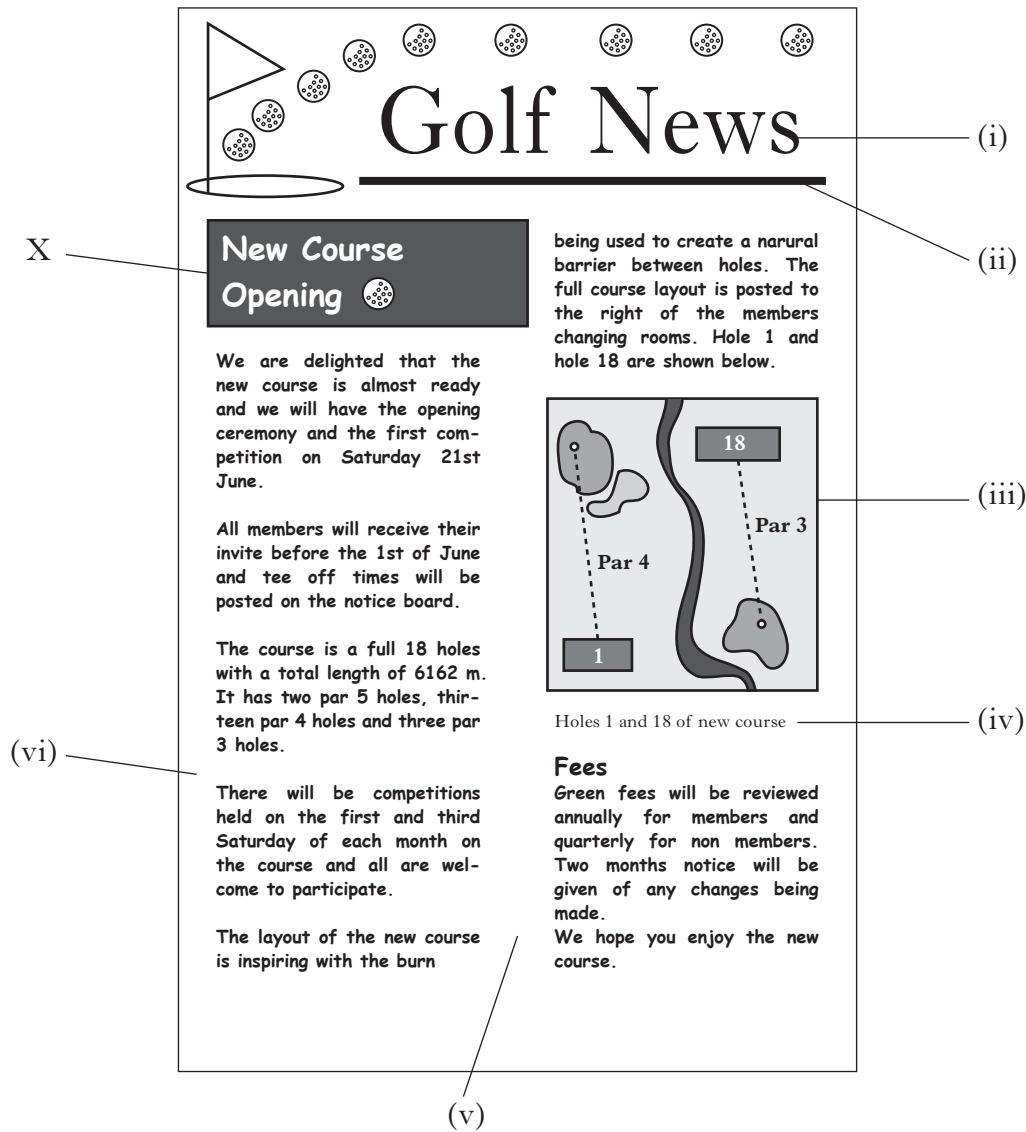
Type of plan ..... 1

**(9)**

Candidate's Name \_\_\_\_\_

The first issue of a golf club newsletter produced on a DTP package is shown below.

Marks

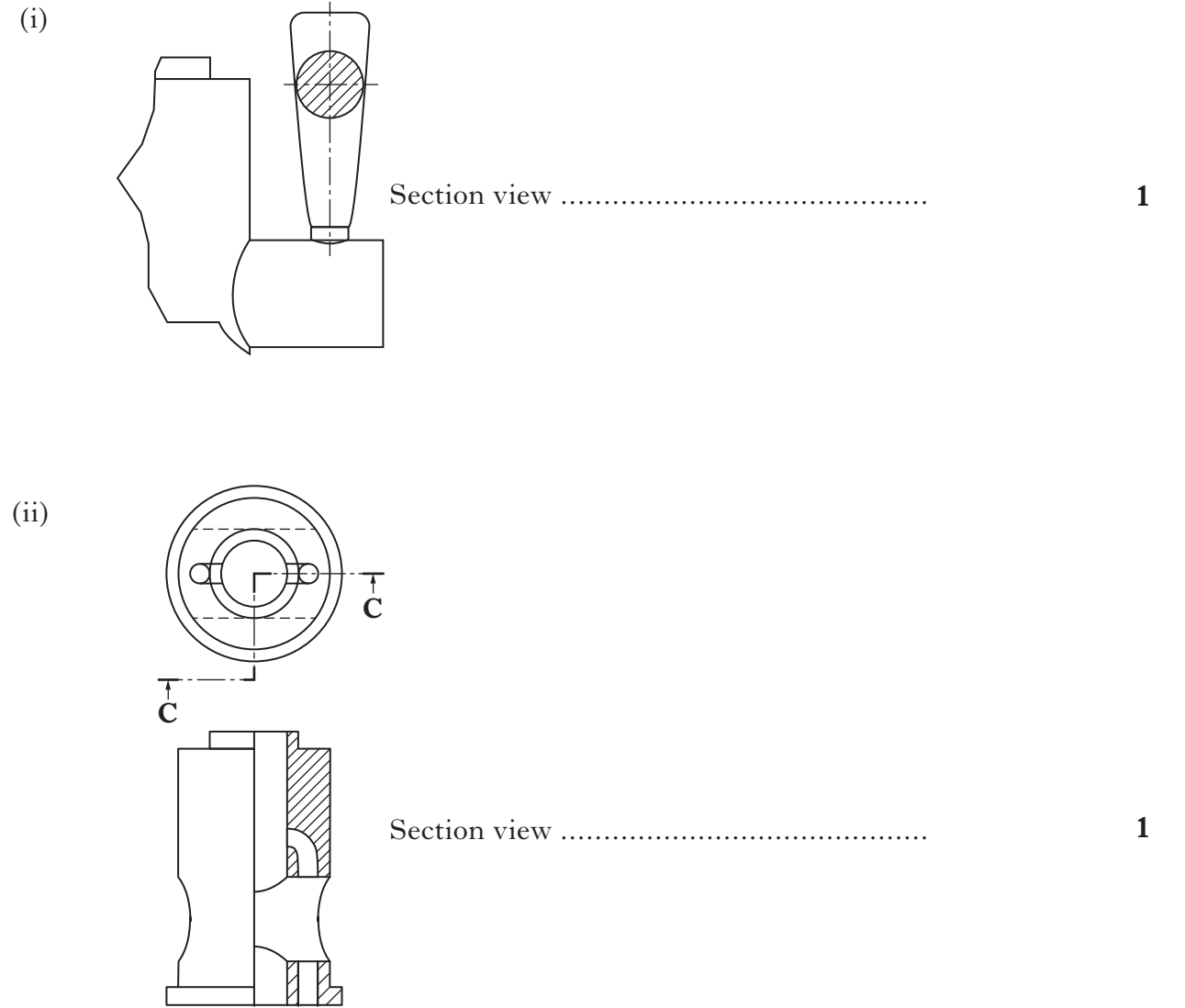


- (a) State the desktop publishing **terms** for each of the numbered elements.
- (i) ..... (ii) ..... 2
- (iii) ..... (iv) ..... 2
- (v) ..... (vi) ..... 2
- (b) State the term for the effect used on the text at X “**New Course Opening**”.
- ..... 1
- (c) Add a footer showing “issue1” to the newsletter. 1
- (d) State the page orientation of the newsletter.
- ..... 1
- (9)

British Standard conventions are used by the engineering and building industry.

Marks

(a) State the type of sectional view indicated in each drawing.



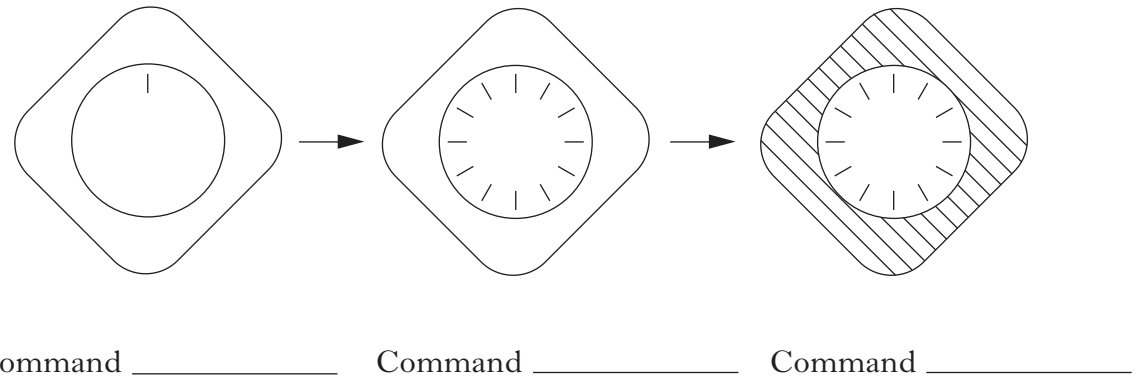
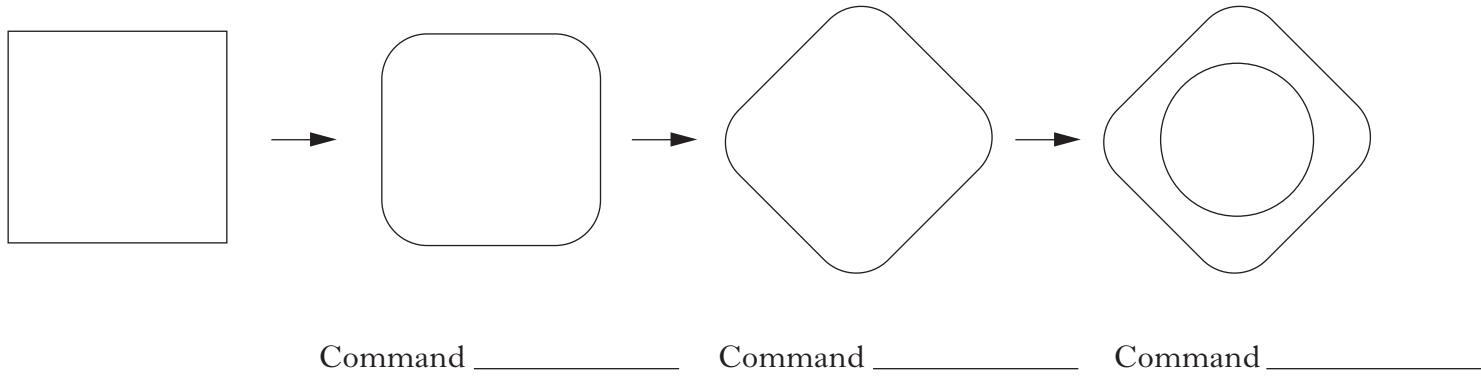
(b) According to **British Standards** the third angle projection symbol is found in the title block of orthographic drawings.

List **four** other pieces of information that a title block should contain.

- (i) ..... 1
- (ii) ..... 1
- (iii) ..... 1
- (iv) ..... 1
- (6)

A company of clock makers are using a **CAD** package to produce working drawings of their new range of clocks. *Marks*

(a) State the single CAD command used in each stage of the clock design below.



6

(b) The clock making company are considering purchasing a colour inkjet or a colour laser printer to produce hard copies of their designs.

State **one** advantage of each type of printer.

Colour Inkjet Printer .....

.....

1

Colour Laser Printer .....

.....

1

(8)

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

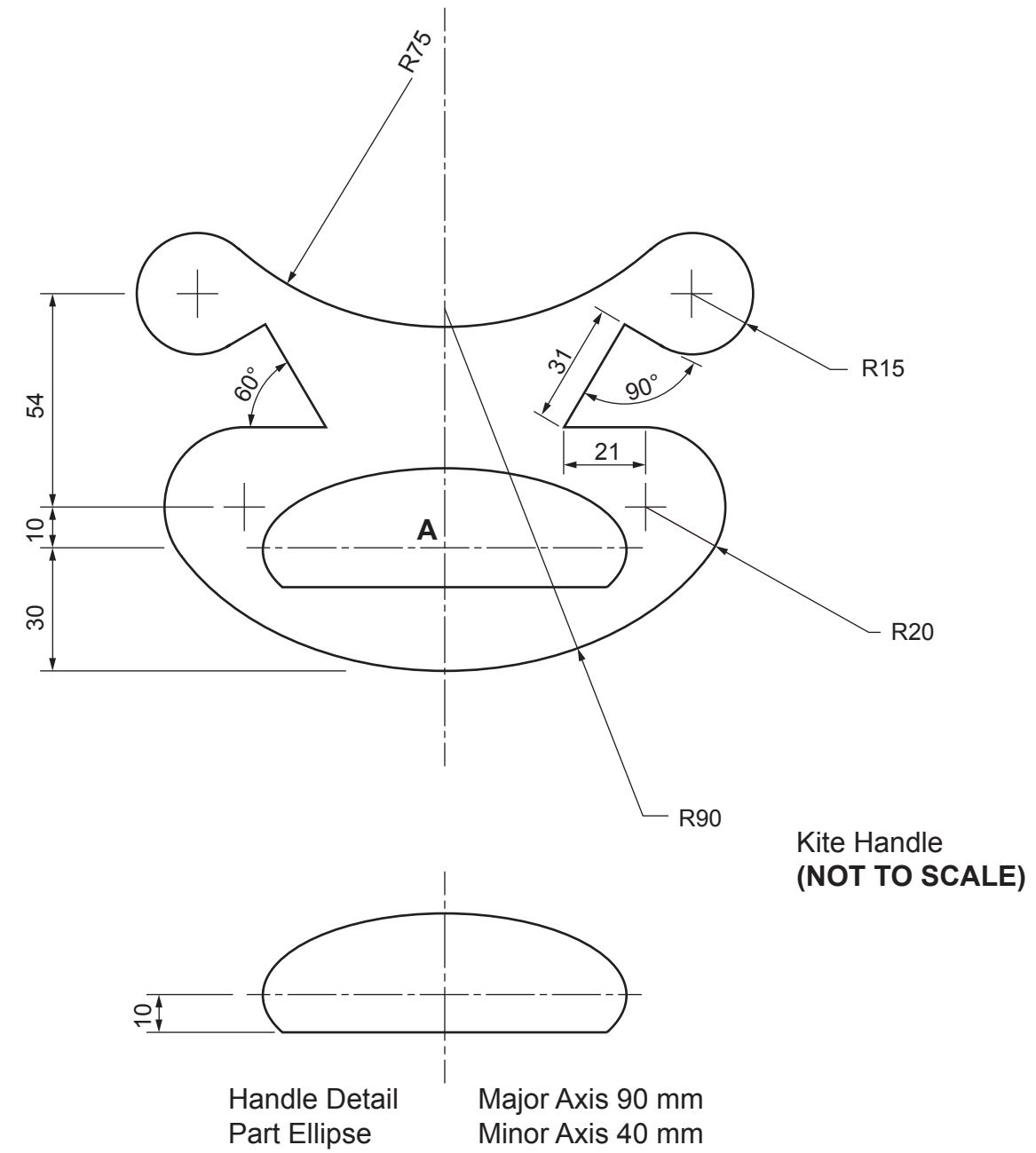
**Number each answer clearly.**

The outline of a kite handle is shown.

Draw the outline using the given start, to a scale of 1:1.

Show clearly the centres used to draw all the arcs.

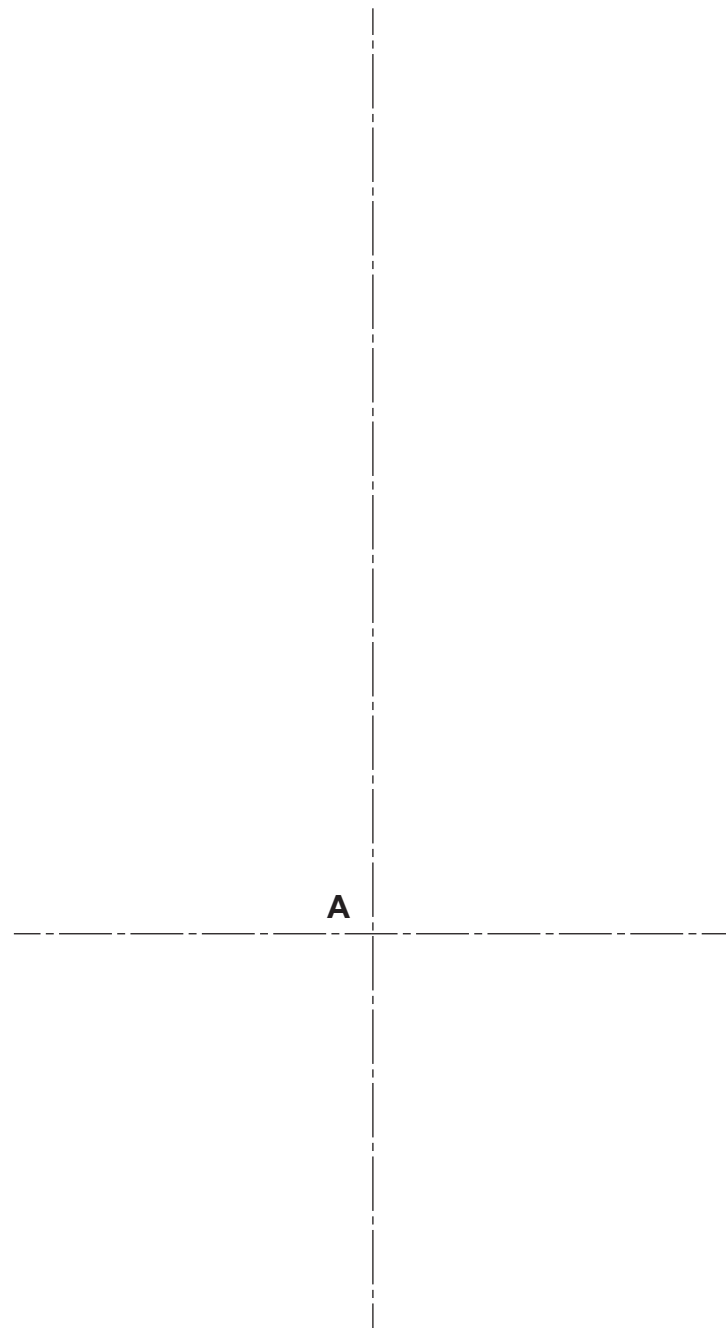
Do not show dimensions. (10 marks)



Kite Handle  
(NOT TO SCALE)

Handle Detail Part Ellipse Major Axis 90 mm Minor Axis 40 mm

(NOT TO SCALE)



<i>a</i>	
<i>b</i>	
<i>c</i>	
<i>d</i>	
<i>e</i>	
<i>f</i>	
<i>g</i>	
<i>h</i>	
<i>i</i>	
<i>j</i>	
<i>k</i>	
<i>l</i>	
<i>m</i>	
<i>n</i>	

The elevation and end elevation of an airport security system are given.

**Draw** a measured 2-point perspective of the security system.

The Spectator Point (**SP**), Plane of Projection (**PP**), Ground Level (**GL**), Eye Level (**EL**) and plan to the same scale are given.

**Do not show hidden detail.**

**(20 marks)**

**EL** \_\_\_\_\_

**GL** \_\_\_\_\_

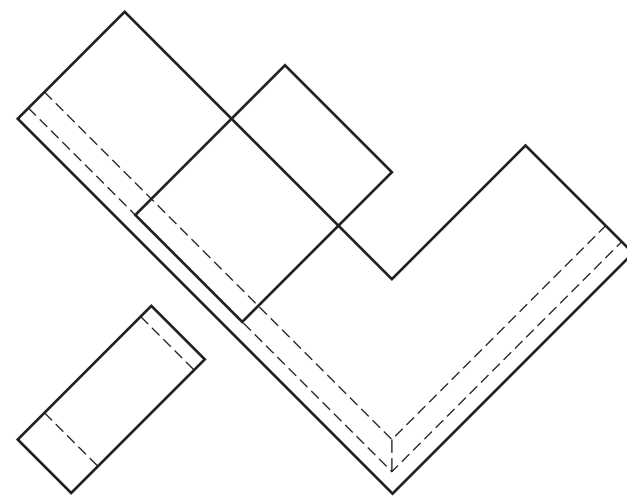
**PP** \_\_\_\_\_

\_\_\_\_\_

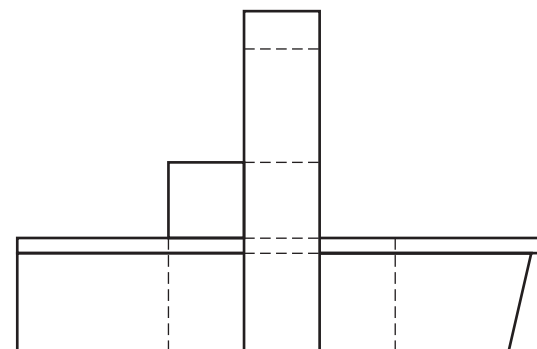
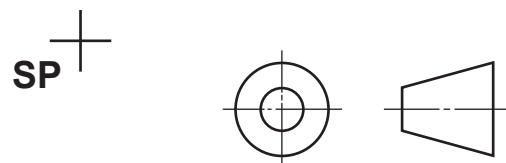
\_\_\_\_\_

\_\_\_\_\_

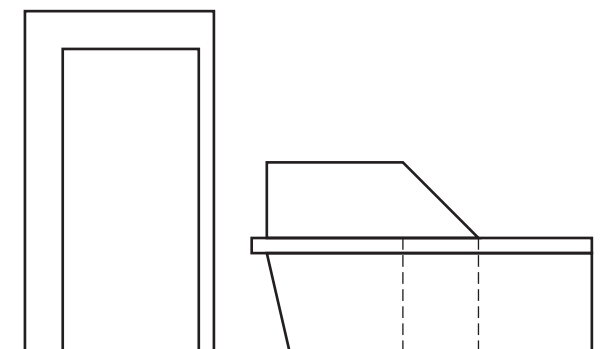
<i>a</i>	
<i>b</i>	
<i>c</i>	
<i>d</i>	
<i>e</i>	
<i>f</i>	
<i>g</i>	
<i>h</i>	
<i>i</i>	
<i>j</i>	
<i>k</i>	
<i>l</i>	
<i>m</i>	
<i>n</i>	



PLAN



END ELEVATION



ELEVATION

Candidate's Name \_\_\_\_\_



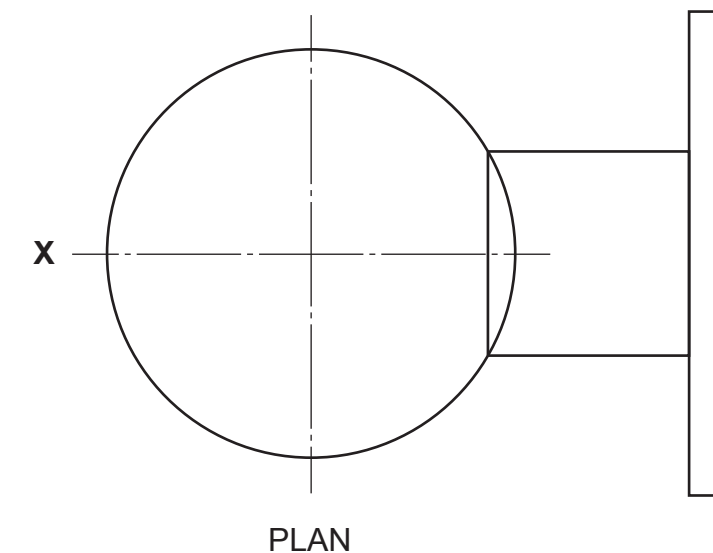
The elevation and plan of a wall light and shade are given.

Draw, in the positions indicated:

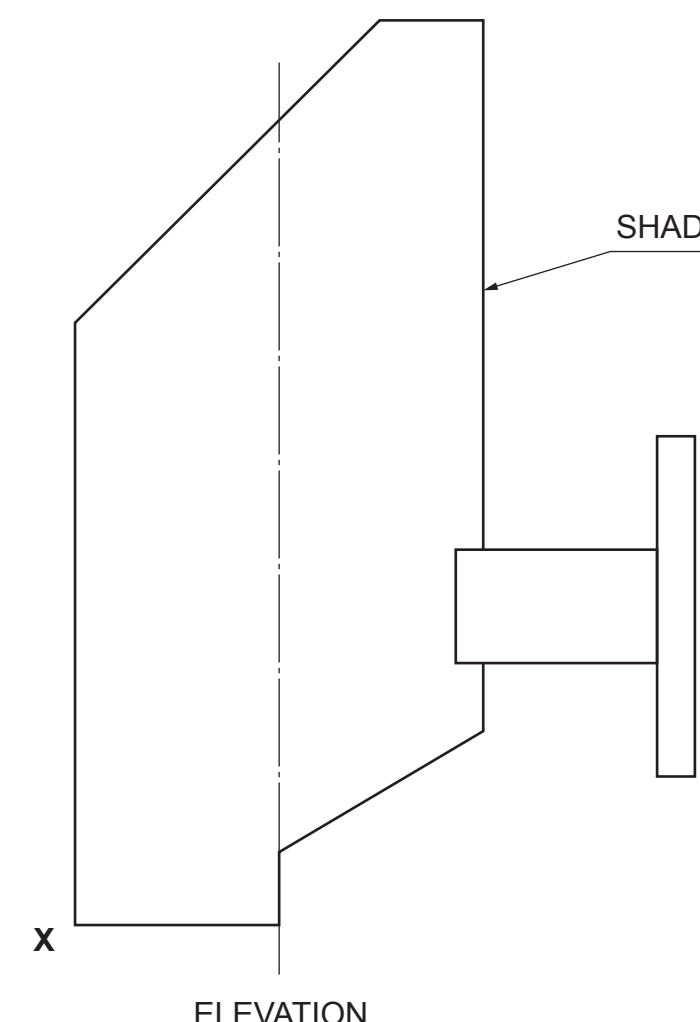
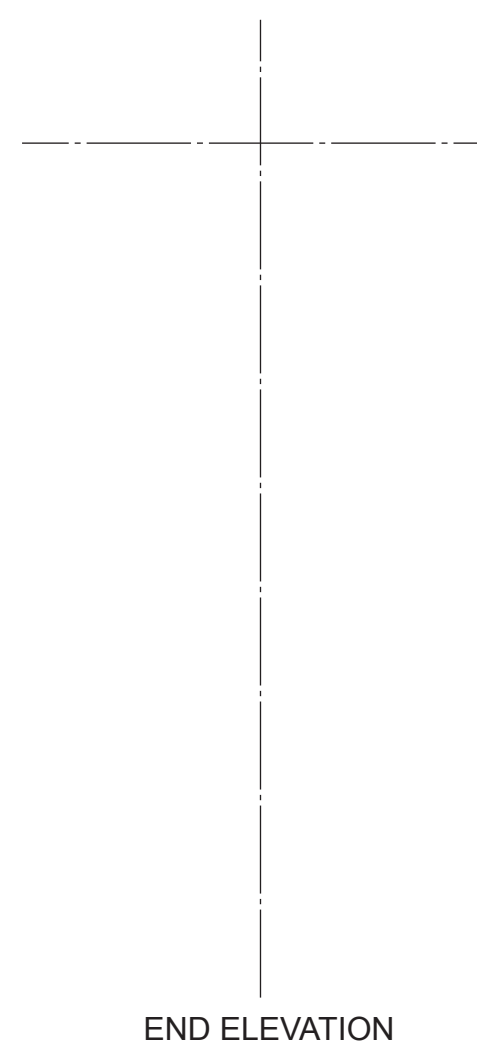
- (a) the end elevation;
- (b) an auxiliary plan;
- (c) a symmetrical half development of the shade part of the light starting at point X.

Do not show hidden detail.

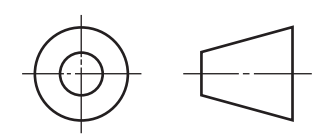
(20 marks)



AUXILIARY PLAN



HALF DEVELOPMENT



a	
b	
c	
d	
e	
f	
g	
h	
i	
j	
k	
l	
m	
n	

Candidate's Name \_\_\_\_\_

The orthographic views of parts of a pulley belt mechanism are shown.

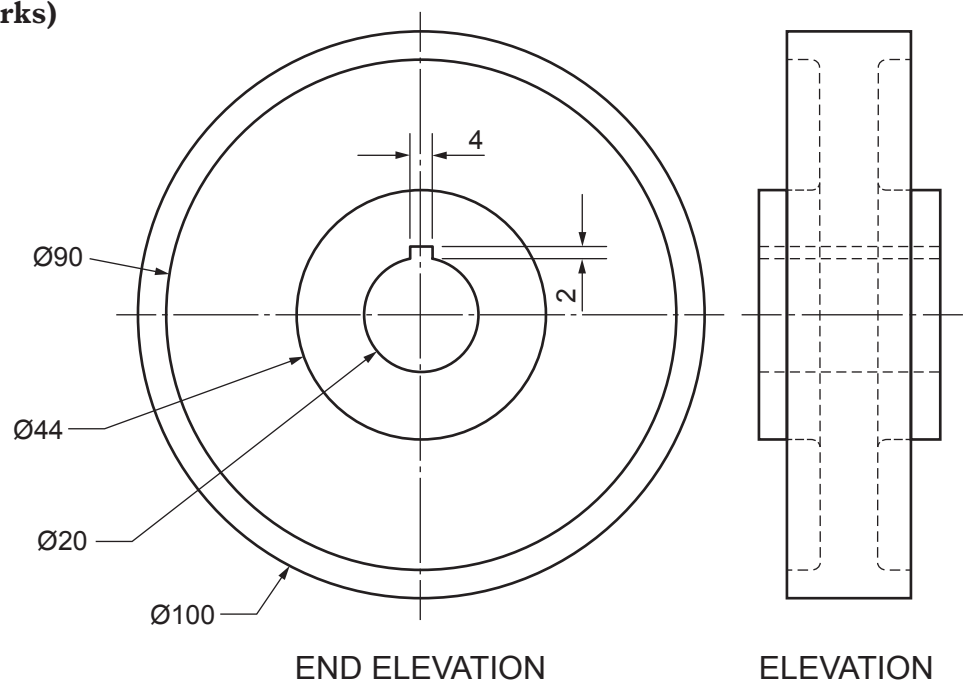
Draw, in the positions indicated on **Worksheet Question 10**:

- (a) the end elevation of the assembled components;  
**Show all hidden detail.**
  - (b) the sectional elevation of all the assembled components on A-A.  
**Do not show hidden detail.**
- (30 marks)**

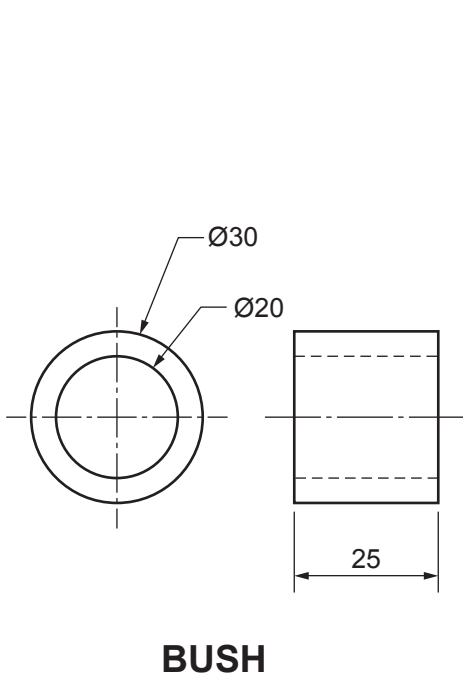
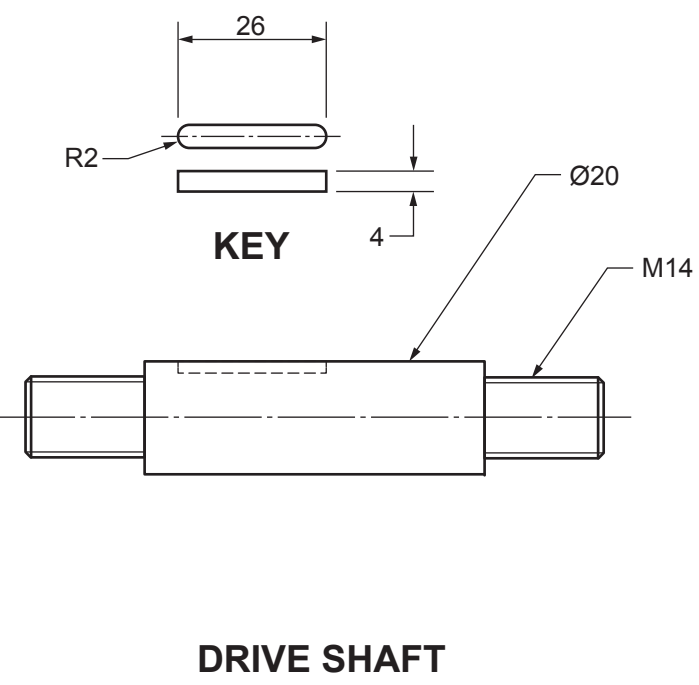
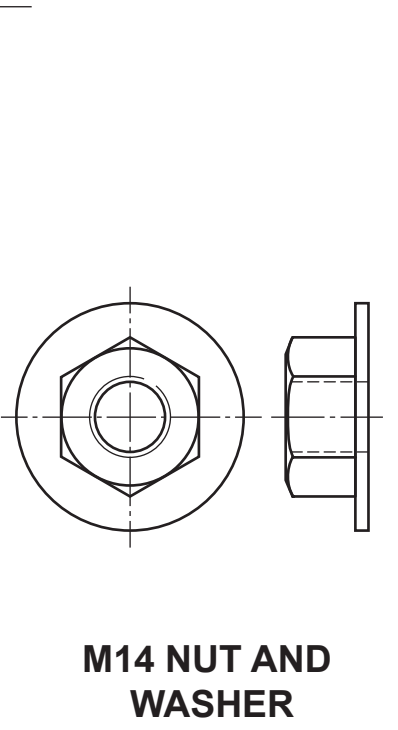
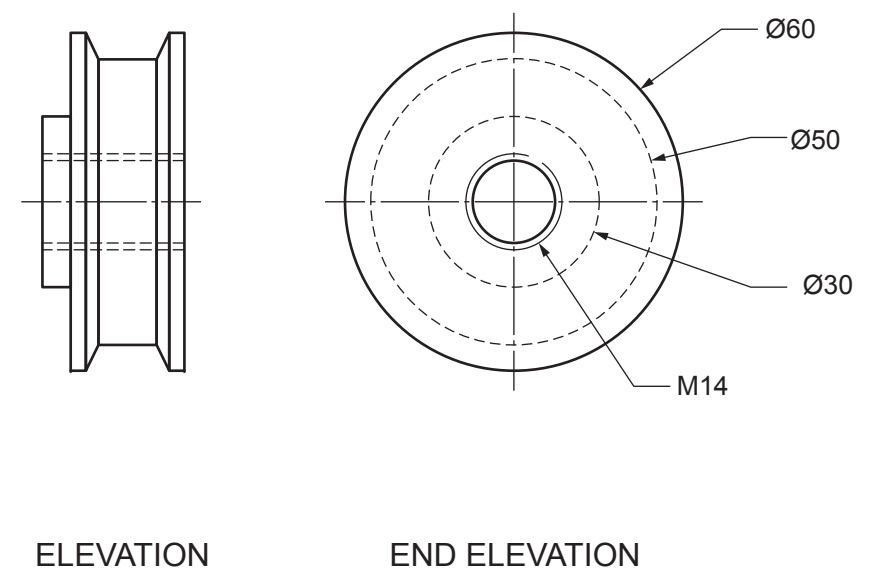
**Note:** Do not section drive shaft or key.  
Fillets should be drawn freehand.

**NOT TO SCALE**

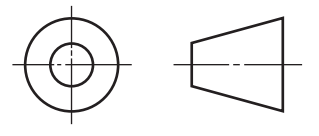
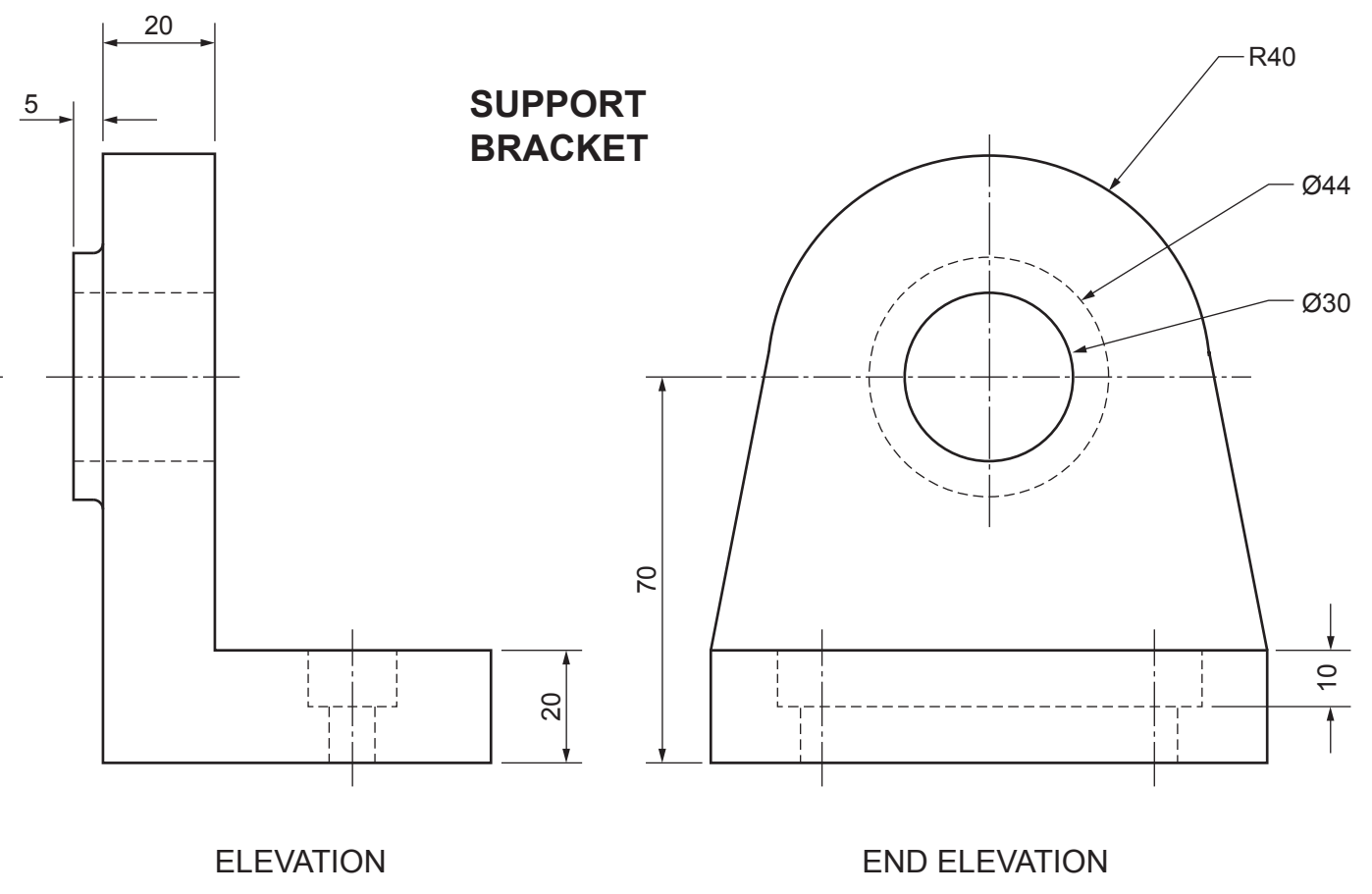
**BELT DRIVE**



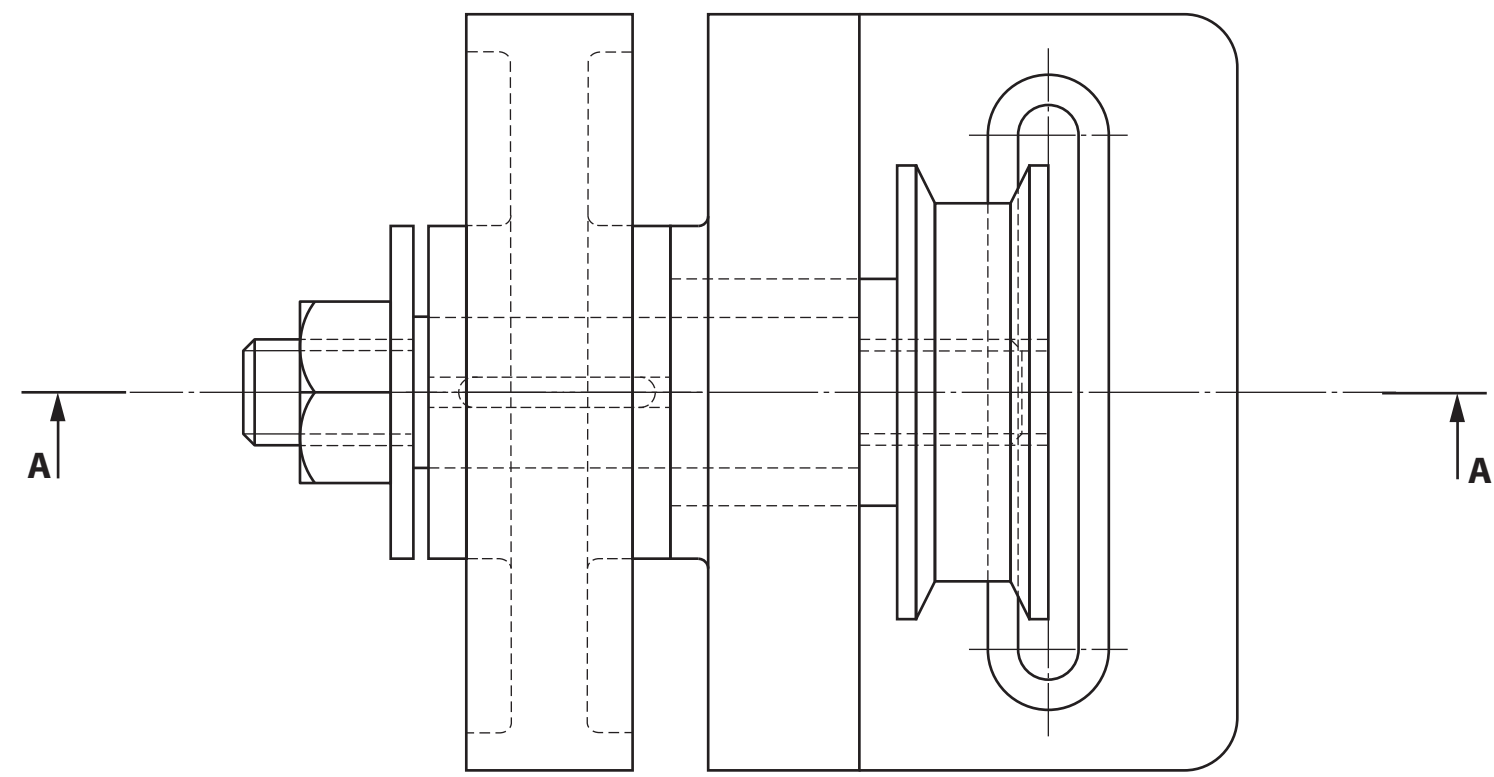
**PULLEY**



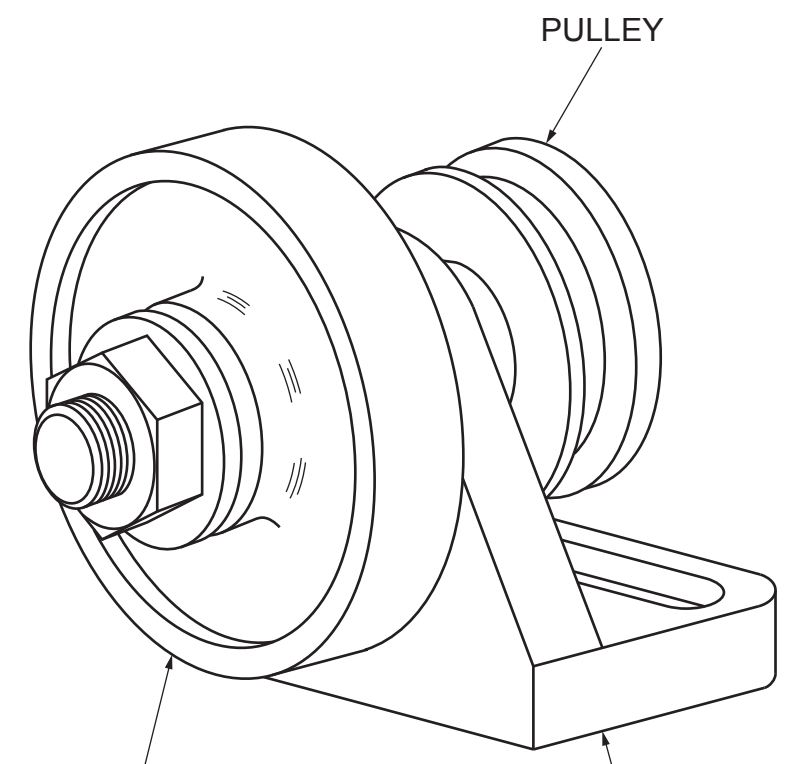
**SUPPORT BRACKET**



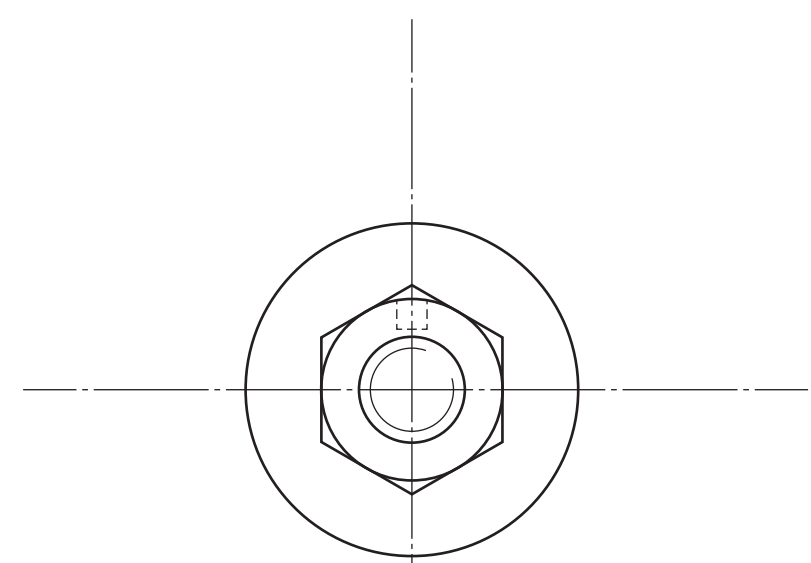
a	
b	
c	
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g	
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i	
j	
k	
l	
m	
n	



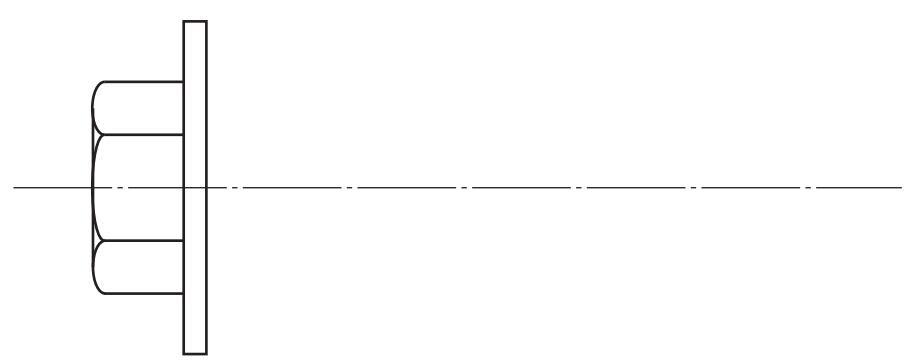
PLAN



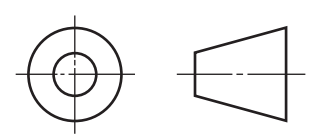
PICTORIAL VIEW  
(Not to scale)



END ELEVATION



SECTIONAL ELEVATION A-A



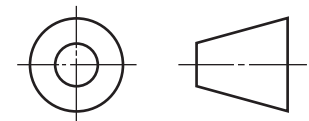
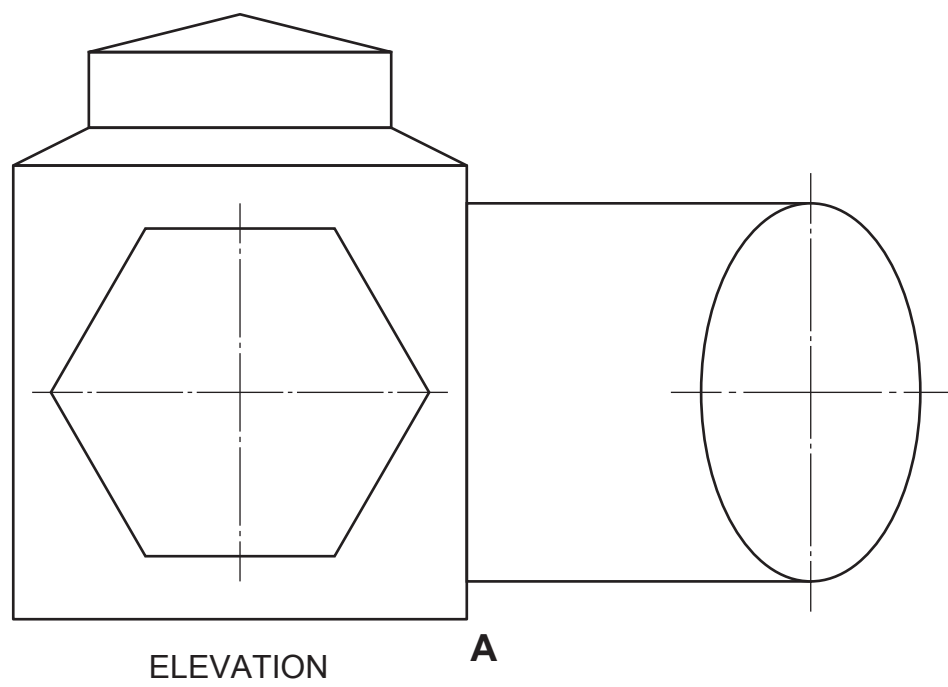
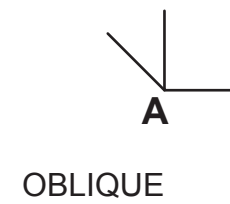
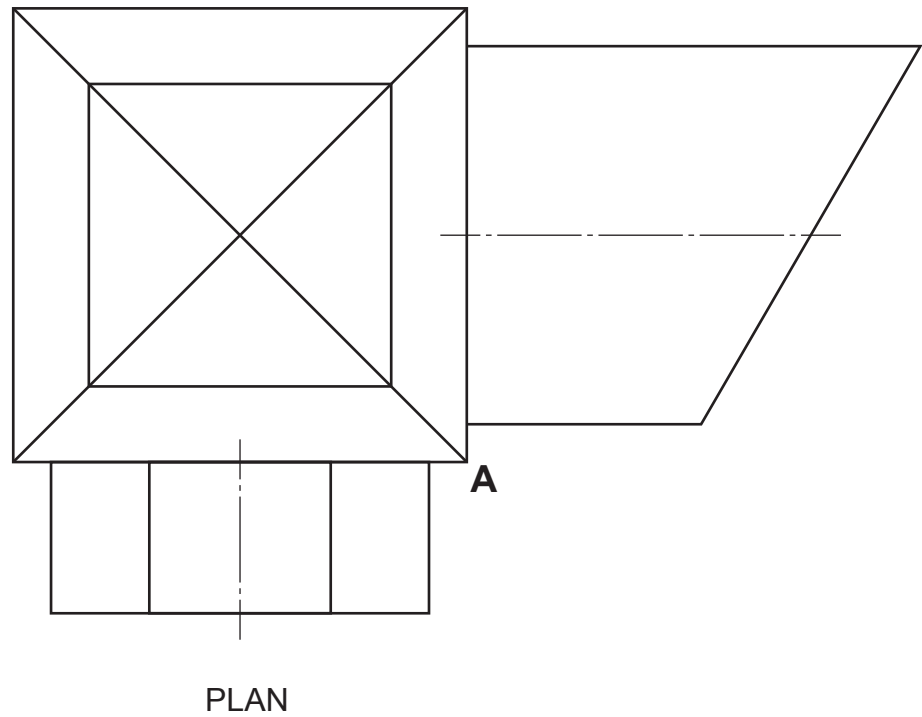
The plan, elevation and end elevation of a child's play tunnel are given.

Draw, to the same scale and ignoring the thickness of the material:

a cabinet oblique view of the play tunnel using the given start at **A**.

Do not show hidden detail.

Lines drawn at 45° should be drawn half full size. (20 marks)



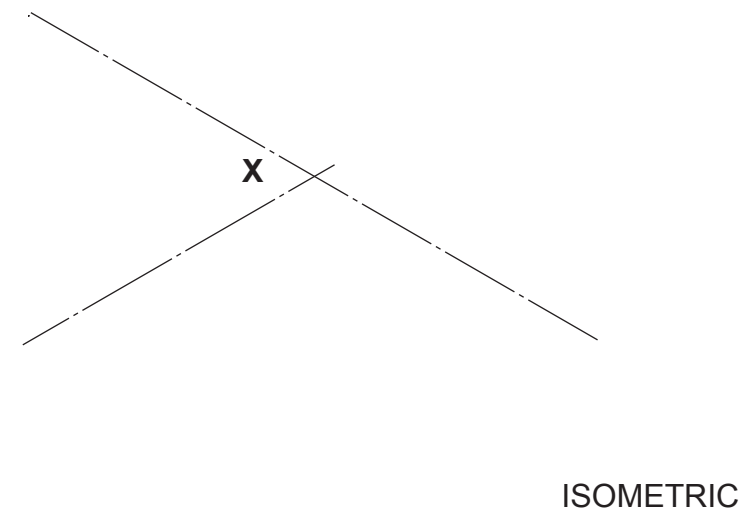
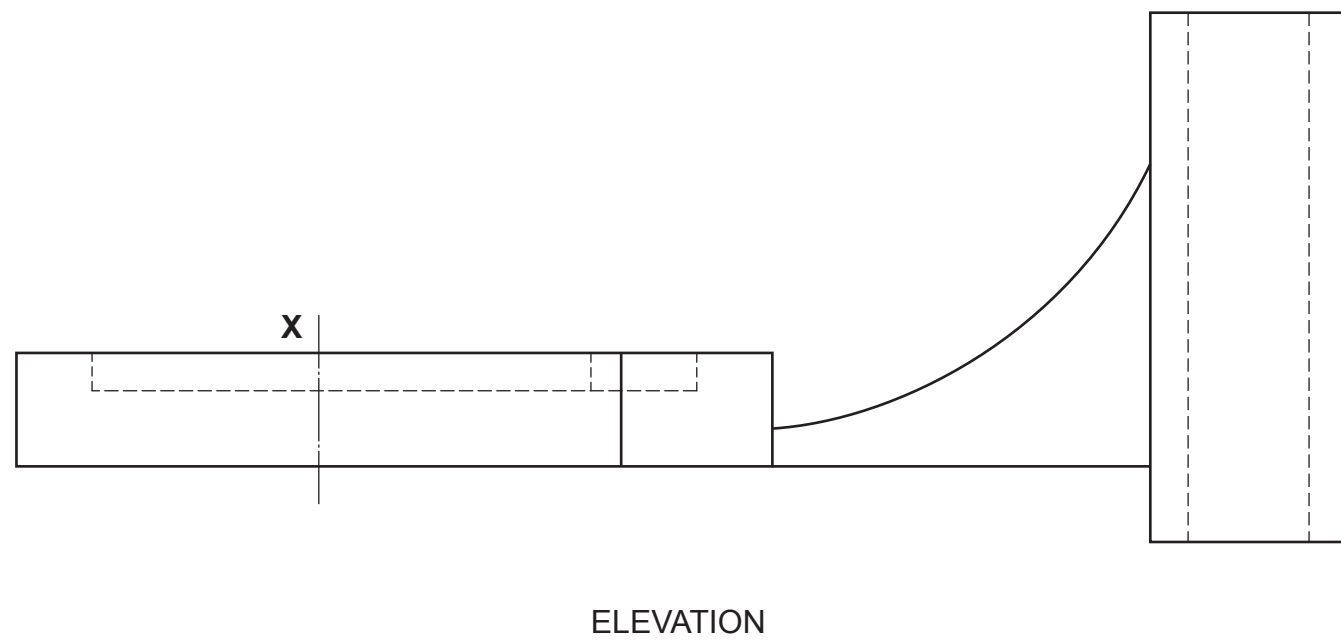
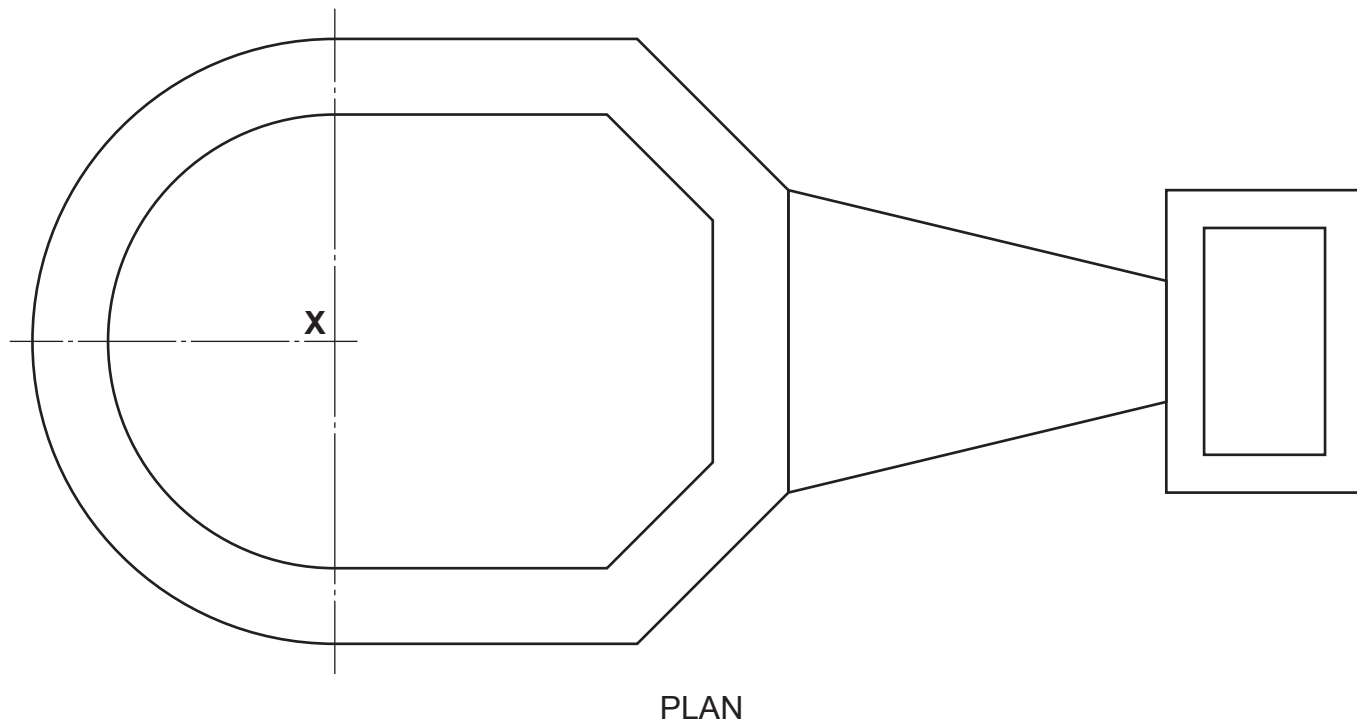
<i>a</i>	
<i>b</i>	
<i>c</i>	
<i>d</i>	
<i>e</i>	
<i>f</i>	
<i>g</i>	
<i>h</i>	
<i>i</i>	
<i>j</i>	
<i>k</i>	
<i>l</i>	
<i>m</i>	
<i>n</i>	

The elevation and plan of a soap dish are given.

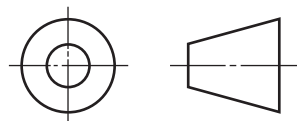
Draw, an isometric view of the soap dish using the given start at X.

Do not show hidden detail.

(20 marks)



<i>a</i>	
<i>b</i>	
<i>c</i>	
<i>d</i>	
<i>e</i>	
<i>f</i>	
<i>g</i>	
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