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FOR OFFICIAL USE

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1330/403

NATIONAL
QUALIFICATIONS
2010

TUESDAY, 18 MAY
1.00 PM – 2.45 PM

GRAPHIC
COMMUNICATION
STANDARD GRADE
Credit Level

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day	Month	Year
<input type="text"/>	<input type="text"/>	<input type="text"/>

Scottish candidate number

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Number of seat

1 110 marks are allocated to this paper: 40 marks for Knowledge and Interpretation
70 marks for Drawing Abilities

2 Answer all questions.

3 Read each question carefully before you answer.

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

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

6 Sketches need only be in line form – do not spend time rendering.

7 Dimensions are given in millimetres or as stated.

8 Orthographic drawings are in third angle projection.

9 For each question, the element being tested and the mark allocation are shown in brackets, eg (DA 5) means a question on Drawing Abilities worth 5 marks.

10 **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).

	KI	DA
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Total Marks		



[BLANK PAGE]

Computer animation and simulation are used in the design of helicopters and the training of pilots.

(a) Describe the main difference between animation and simulation.

Answer

..... **KI 1**

(b) State **two** advantages of using a simulator to train helicopter pilots.

1

.....

2

..... **KI 2**

(c) State how computer animation of a new design could be of use to the marketing department of the company.

Answer

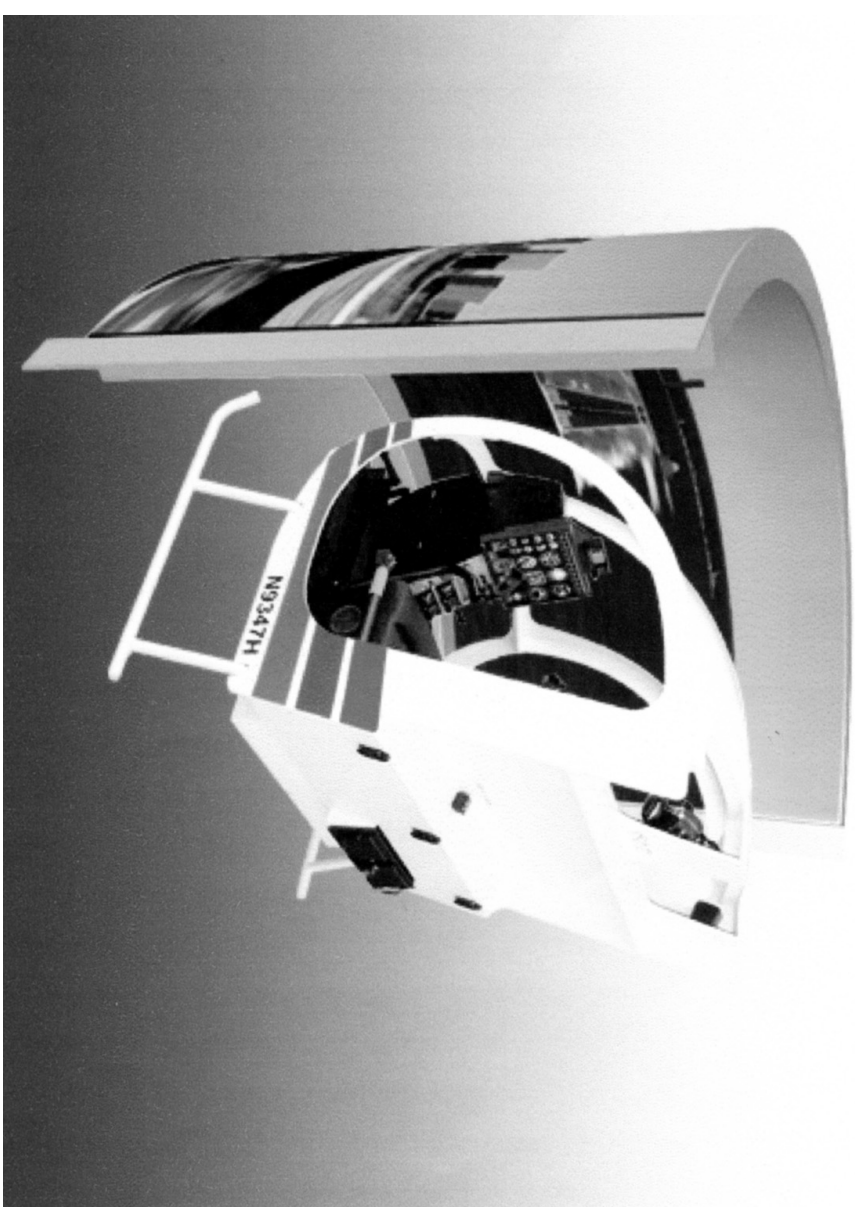
..... **KI 1**

(d) The aerodynamics of the helicopter were checked using computer simulation. State **one** other design factor that could be investigated using computer simulation.

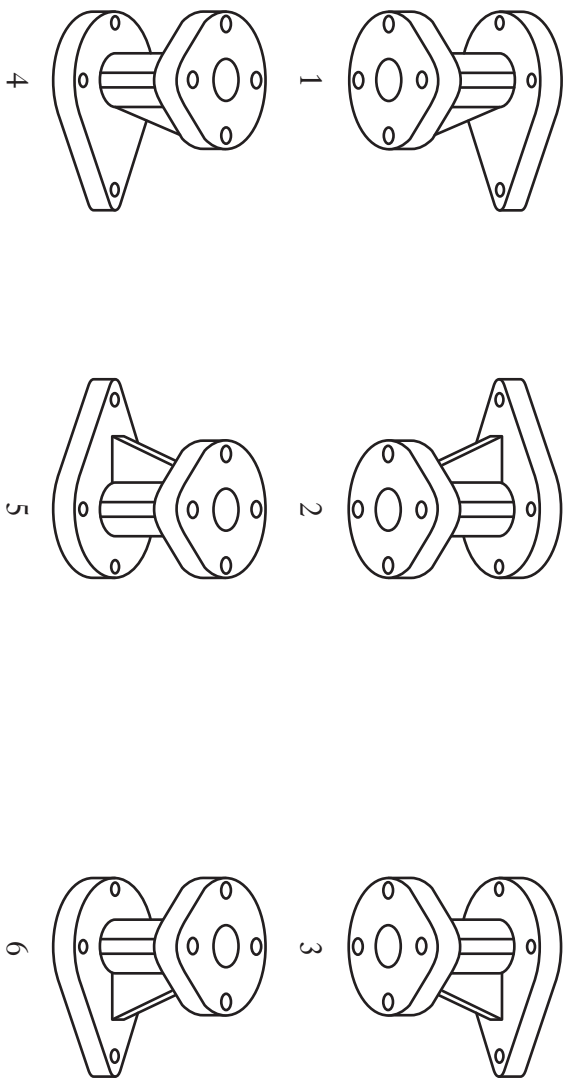
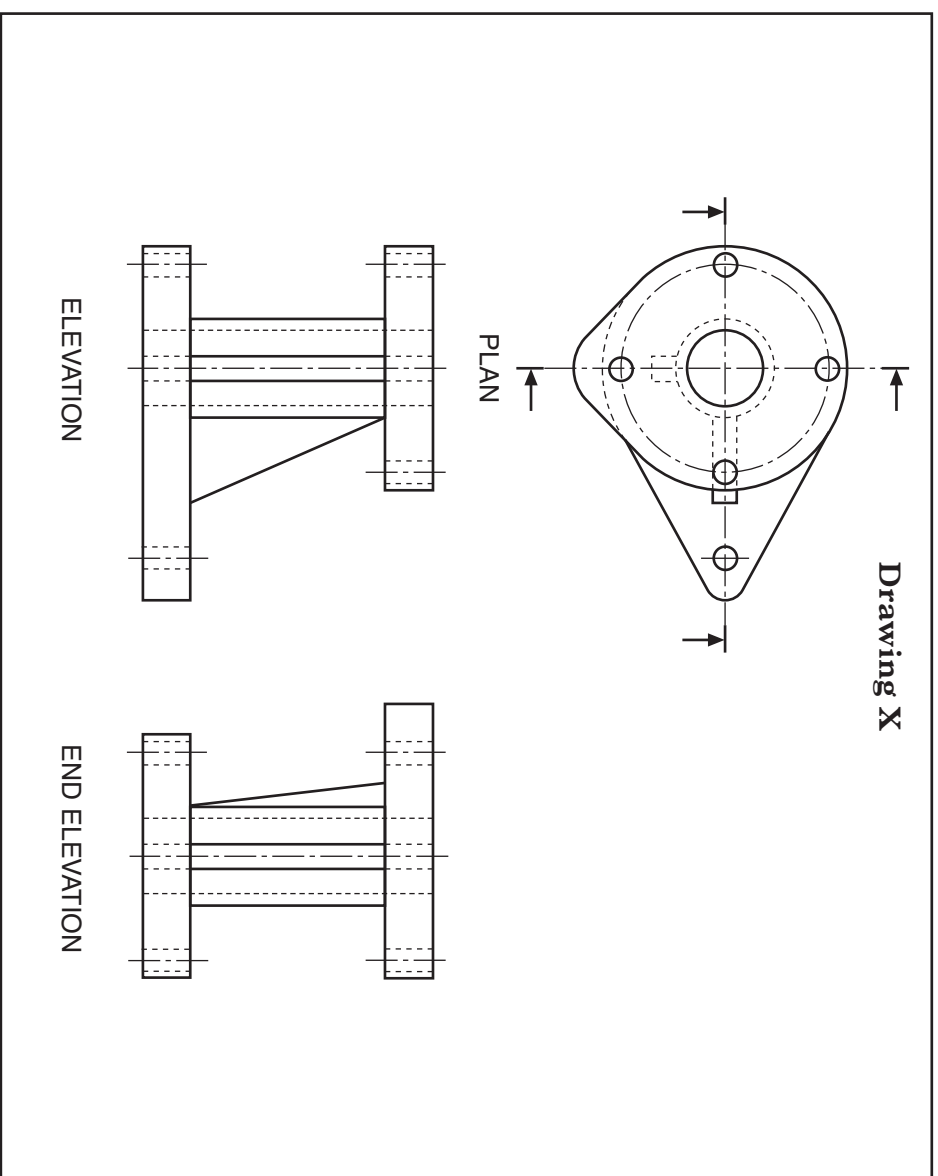
Answer

..... **KI 1**

Total (KI 5)



The elevation, end elevation and plan of a coupling are shown in **Drawing X**.



(a) State which **two** of the pictorial drawings 1 to 6 above represent the coupling shown in **Drawing X**.

Answer 1 Answer 2

(b) State the names of **three** types of pictorial drawing that could have been used to draw the bracket.

1 2 3

(c) State the main purpose of producing a pictorial view of an object.

Purpose

..... KI 1

Eight sectional views 7 to 14 are shown opposite.

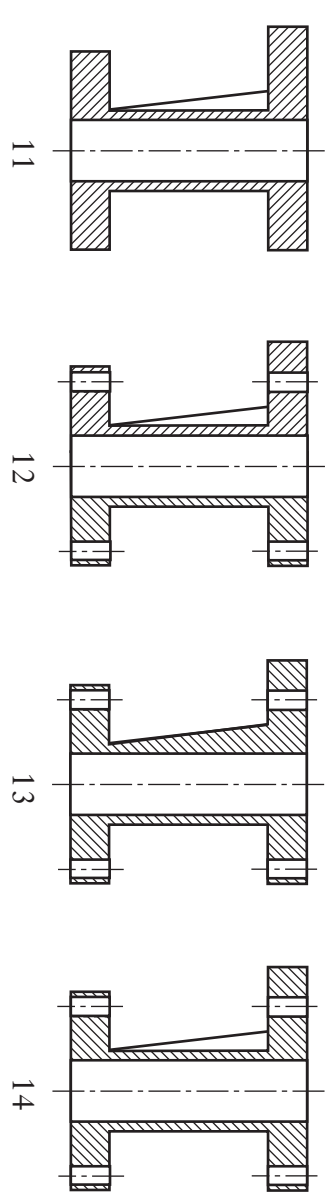
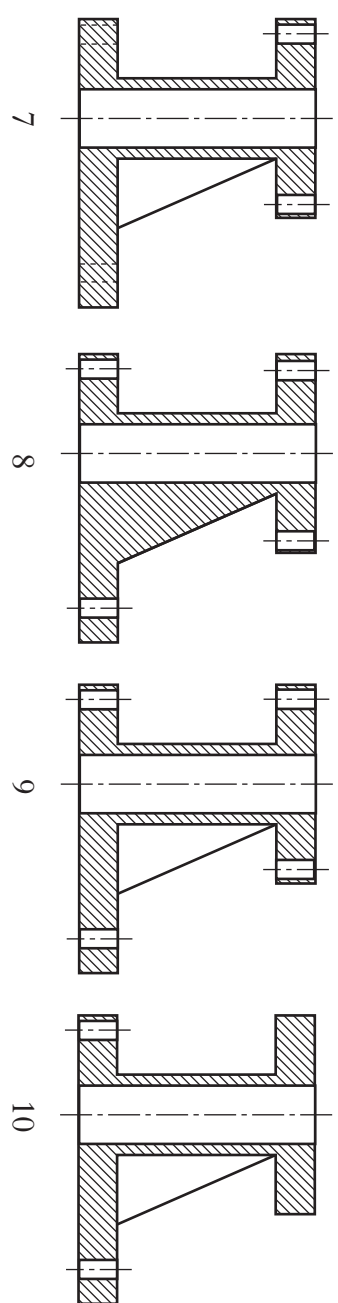
(d) State which **two** are correct sections of the coupling.

Answer 1 Answer 2

(e) On **Drawing X**, and using the correct BSI convention for dimensioning, add the **overall height** and **breadth** to the END ELEVATION.

KI 2

Total (KI 10)



A company that designs mobile phones now uses computers for all their design work.

Speed and accuracy are two advantages of using CAD software.

(a) State **three** other advantages of CAD over manual methods when producing these designs.

1

.....

2

.....

3

..... **KI 3**

(b) Hardware and software costs are disadvantages of CAD.

State **three** other disadvantages to the company of using CAD over manual methods when producing new designs.

1

.....

2

.....

3

..... **KI 3**

(c) State **two** input devices that could be used to transfer the company's existing manual drawings to the computer's memory.

Device 1 Device 2 **KI 2**

(d) State **one** reason why the company always creates a backup at the end of each day.

Reason

..... **KI 1**

Total (KI 9)



A company now uses computer-generated models for all its modelling needs.

One of the advantages of computer-generated models is that they can be quicker to produce than built scale models.

(a) State **two** other advantages of computer-generated models.

- 1
 -
 - 2
 -
- KI 2**

(b) State **two** disadvantages of computer-generated models over built scale models.

- 1
 -
 - 2
 -
- KI 2**

(c) State the types of computer-generated views shown at X and Y.

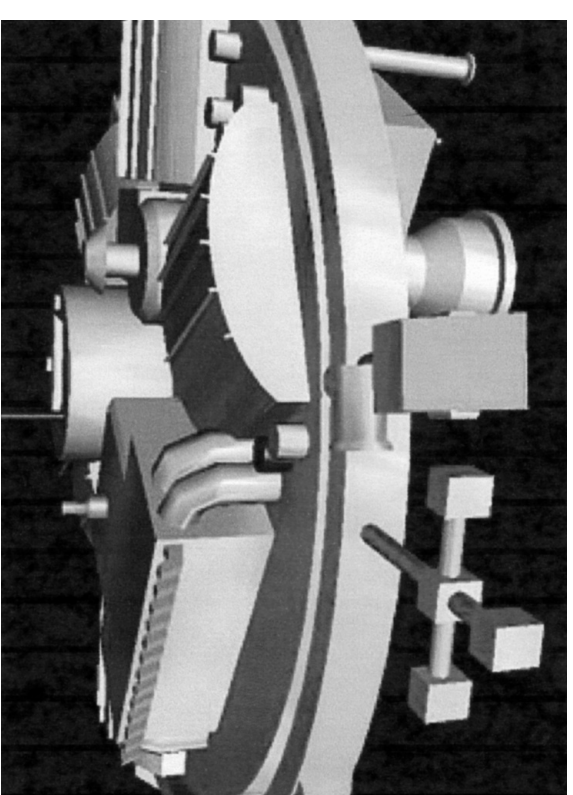
Model X

Model Y

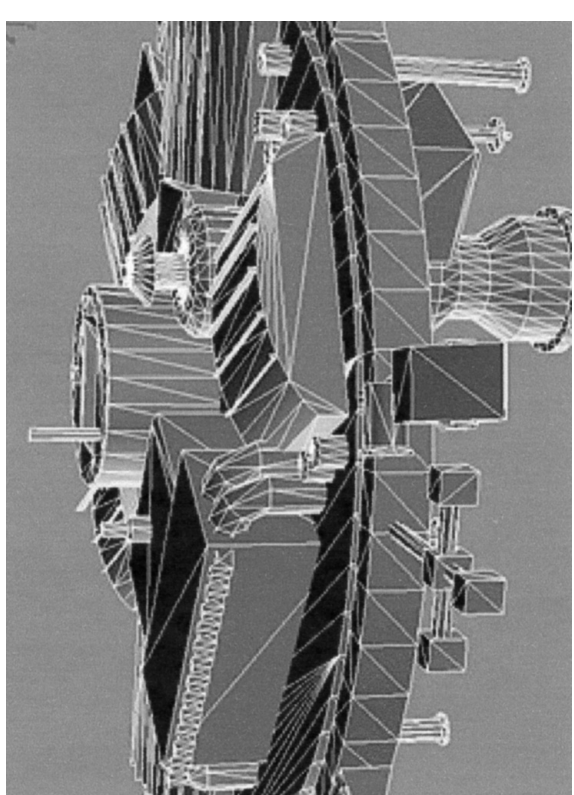
(d) State **one** other type of computer-generated model.

.....

KI 1
Total (KI 7)



View X



View Y

Many different types of drawings and views are used in the graphic industry.

(a) **View 1** and **View 2** are used in the engineering industry.

(i) State the name given to these types of views.

View 1 **View 2** **KI 2**

(ii) Explain the purpose of these drawings.

Purpose of **View 1**

.....

Purpose of **View 2**

..... **KI 2**

Plan 3 and **Plan 4** are used in the building industry.

(b) State the name given to these types of plans.

Plan 3

Plan 4 **KI 2**

(c) State the name given to the type of plan that would be used to show the interior layout of the building.

Answer **KI 1**

(d) State the name given to Symbol X on **Plan 3**.

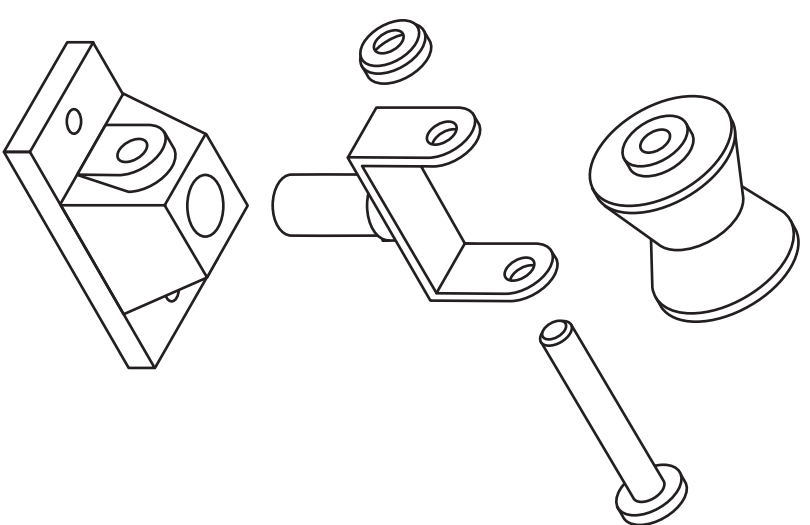
Answer **KI 1**

(e) Explain the meaning of 1:2 when it is written on a drawing.

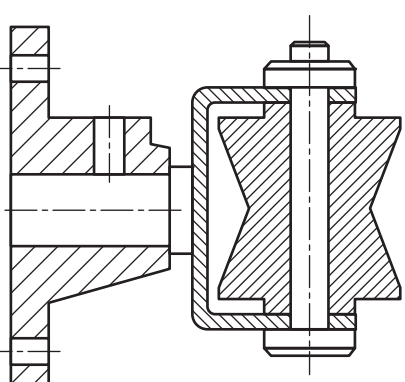
Explanation

..... **KI 1**

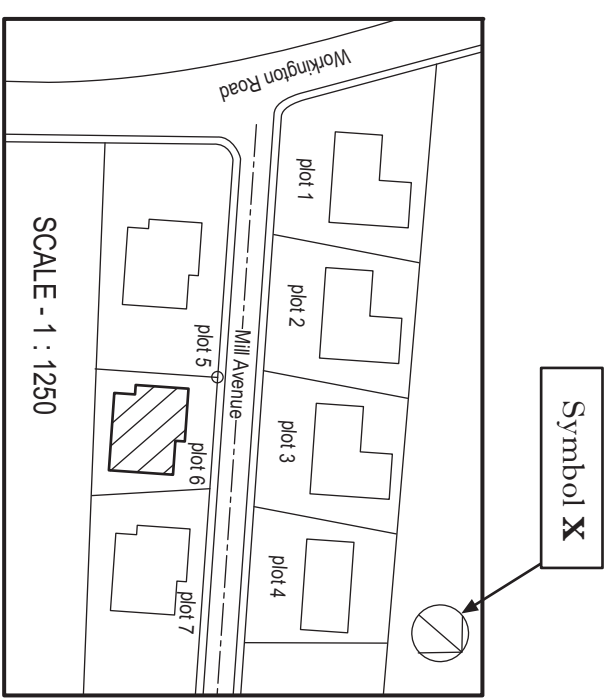
Total (KI 9)



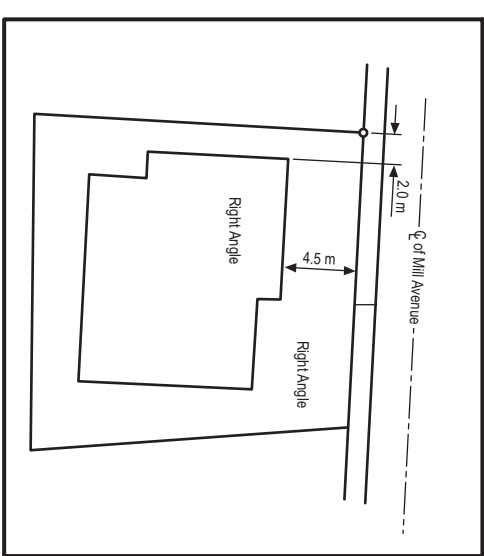
View 1



View 2



Plan 3



Plan 4

A pictorial view of a games console is shown. An incomplete plan of the games console is given.

Draw:

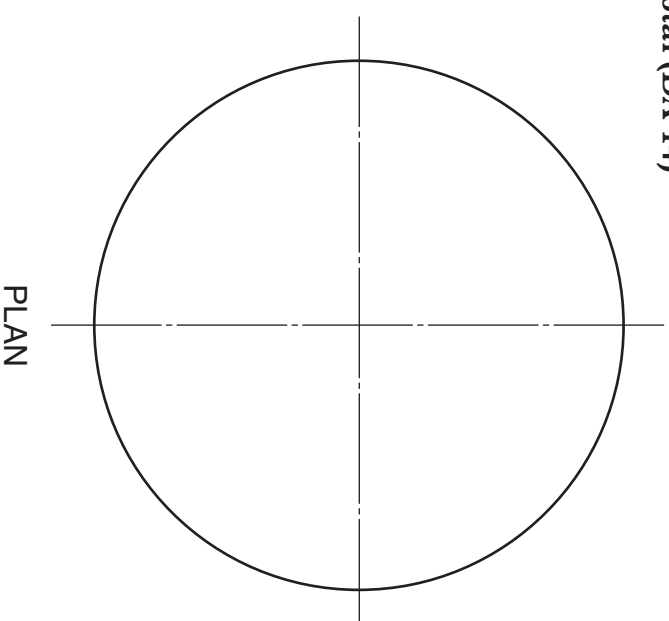
- (a) the elevation in the position given;
- (b) the complete plan projected from the elevation;
- (c) the end elevation projected from the elevation and plan.

DA 4

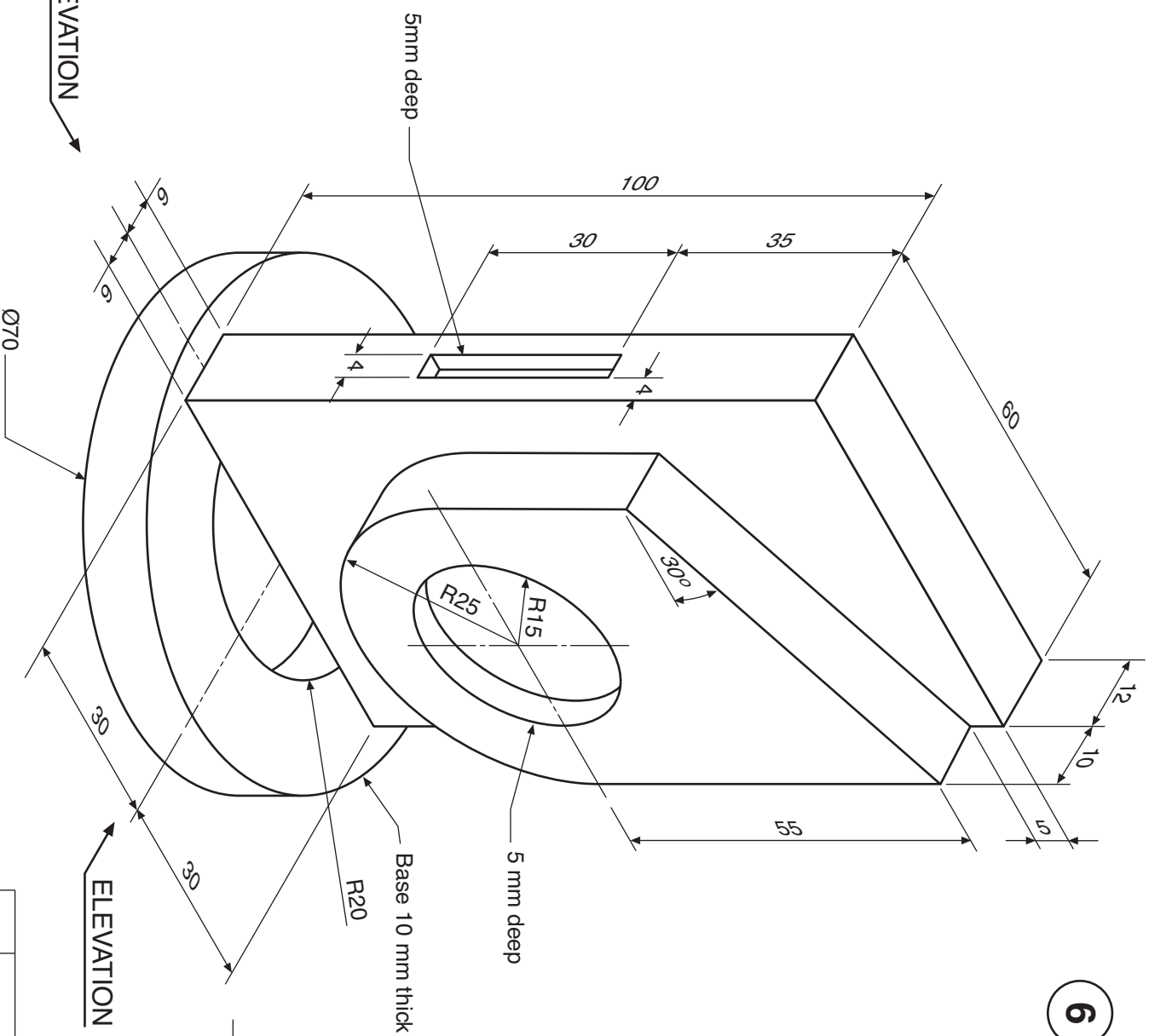
DA 4

DA 6

Total (DA 14)

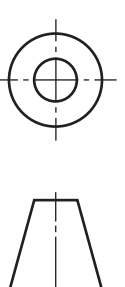


END ELEVATION



ELEVATION

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END ELEVATION

ELEVATION

The elevation and end elevation of a cut pyramid are given.

Draw in the given positions:

(a) the plan;

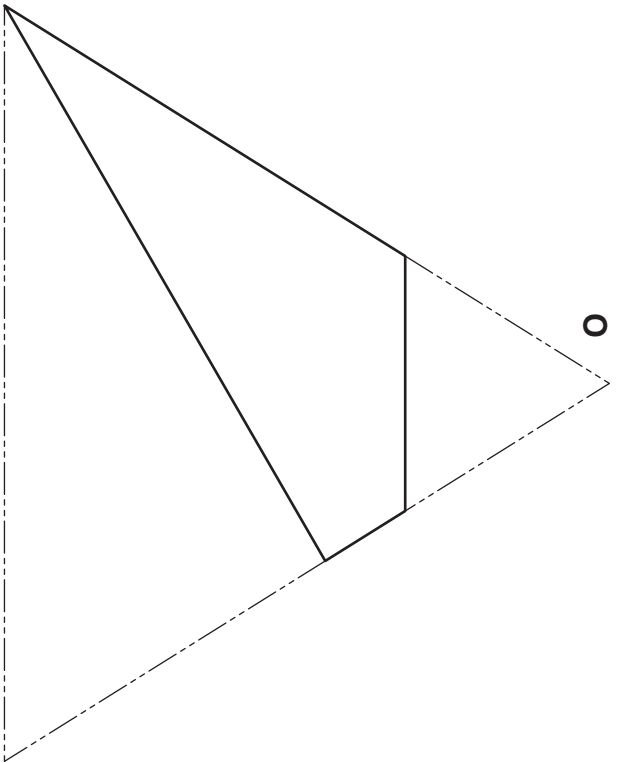
(b) the development of the sloping sides of the pyramid.

DA 5

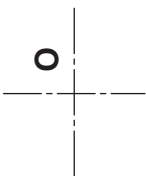
DA 8

Total (DA 13)

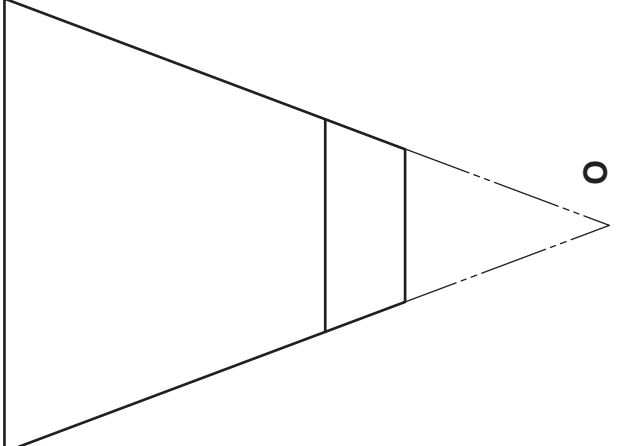
PLAN



ELEVATION

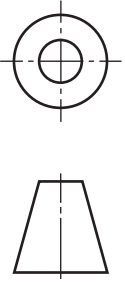


END ELEVATION



DEVELOPMENT

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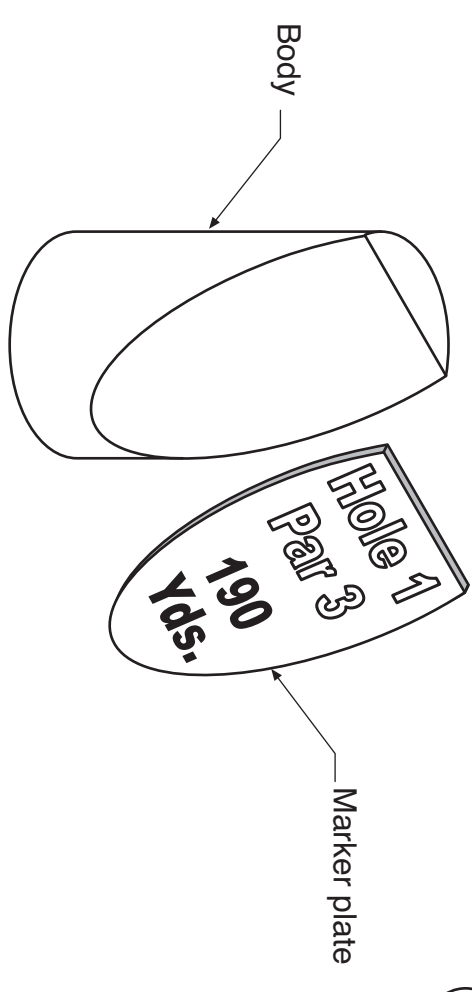
The exploded pictorial view of a golf tee marker is shown and the elevation of the body is given.

Draw in the given positions:

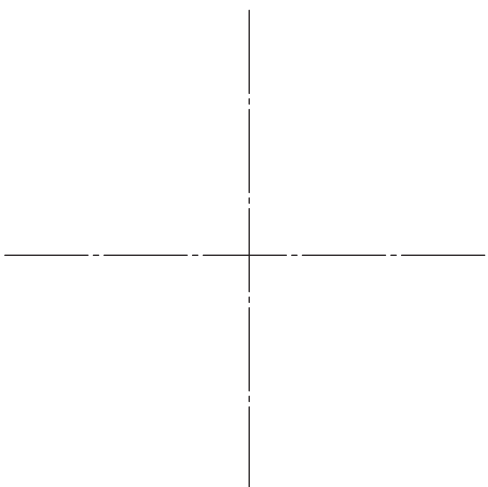
- (a) the plan of the body;
- (b) the end elevation of the body;
- (c) the true shape of the sloping surface of the body.

Do not include marker plate.

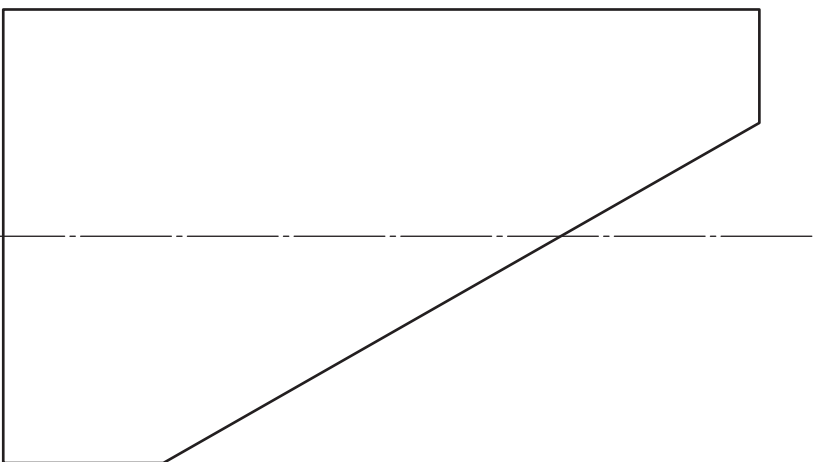
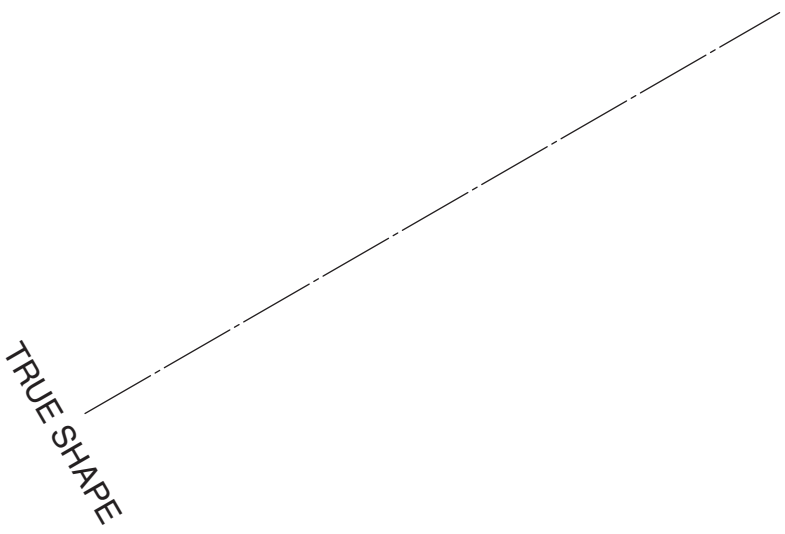
DA 2
DA 6
DA 4
Total (DA 12)



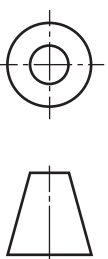
EXPLODED PICTORIAL VIEW



PLAN



ELEVATION



END ELEVATION

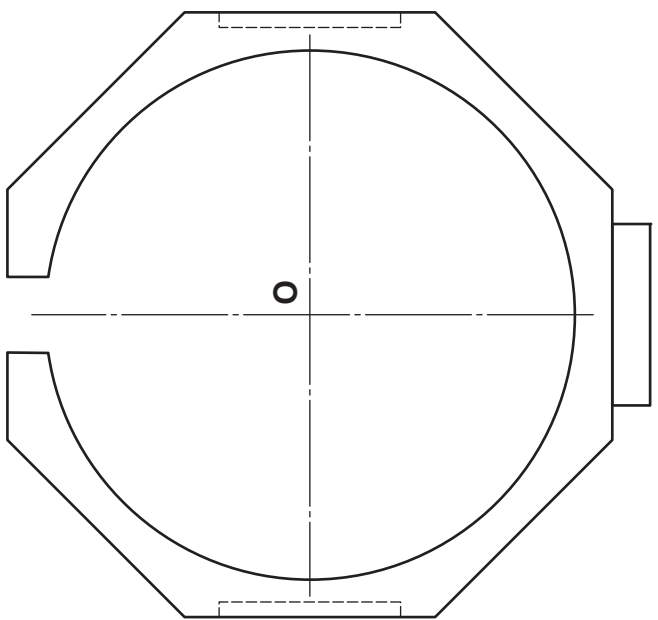
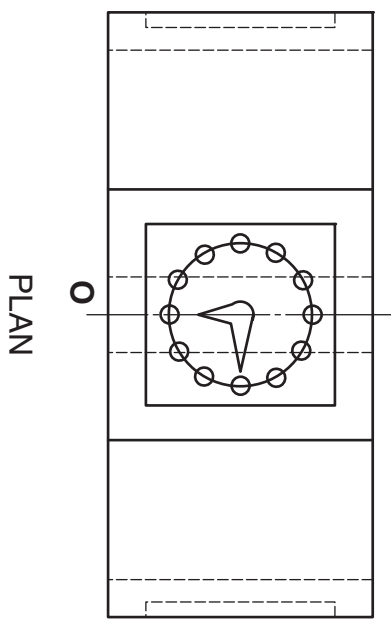
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Three views of a “bangle watch” are given.

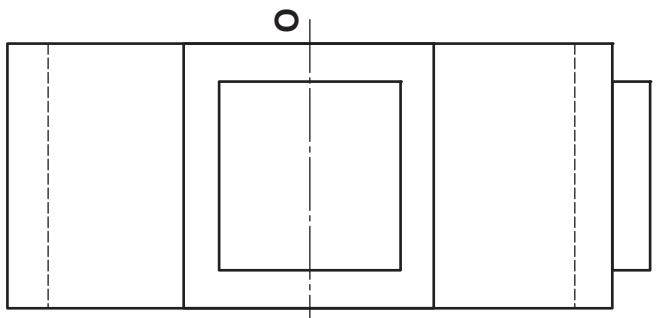
Draw an isometric view of the watch using the starting point O.

Do not show hidden detail or the watch face.

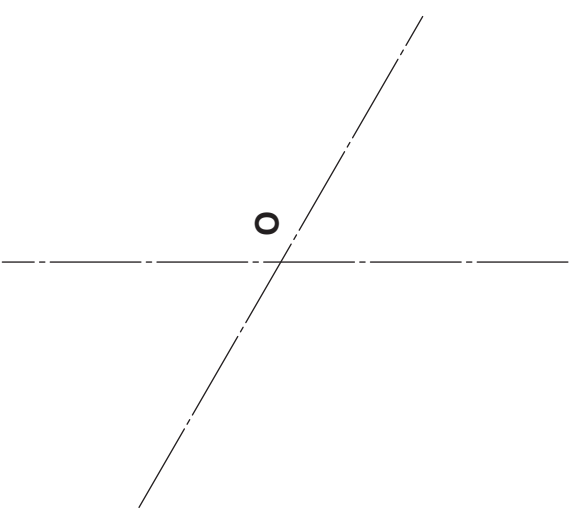
Total (DA 17)



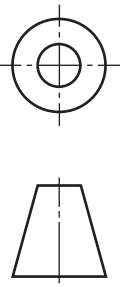
ELEVATION



END ELEVATION



[1330/403]



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Candidate's Name _____

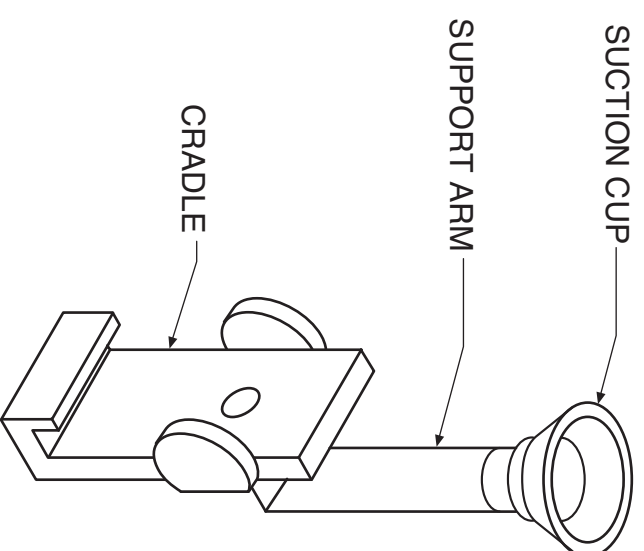
Elevations of three parts of a phone holder are given.

A pictorial view of the holder is also shown.

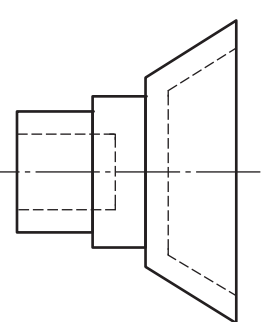
Draw, using the sizes from the detail drawings:

- (a) the complete elevation of the assembled holder in the position shown; **(show all hidden detail)**
- (b) the sectional end elevation of the holder on A-A, with all three parts hatched appropriately. **(Do not show hidden detail.)**

DA 5
DA 9
Total (DA 14)

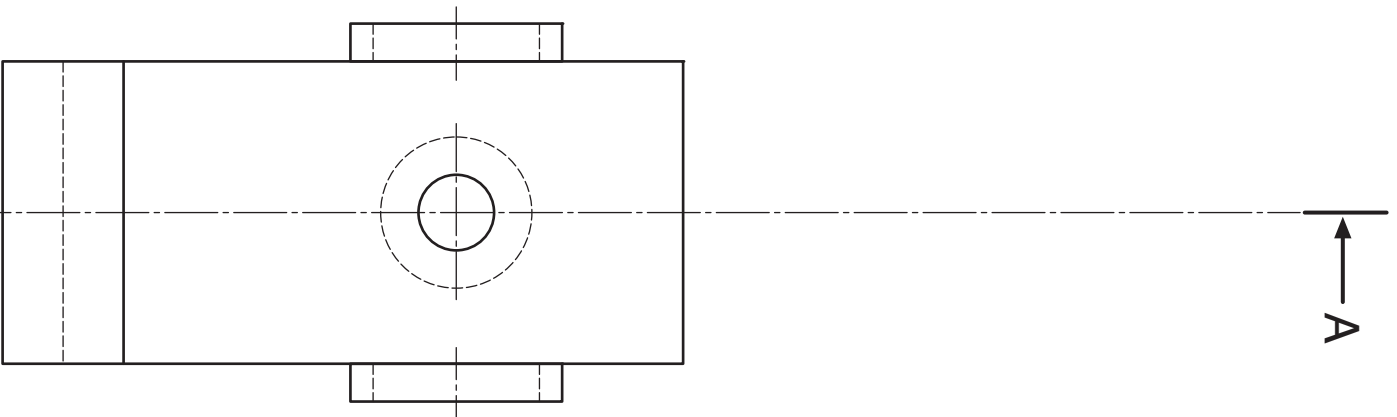


PICTORIAL VIEW



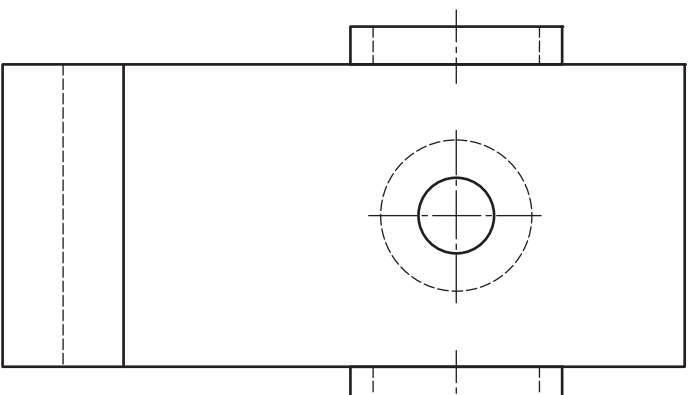
SUCTION CUP

END ELEVATION

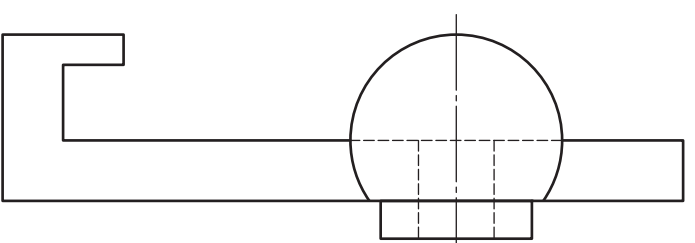


ELEVATION

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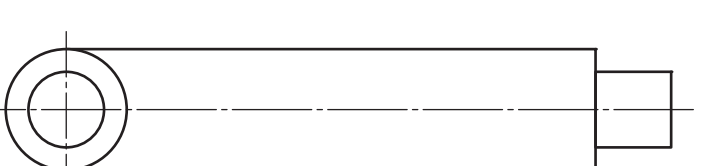


ELEVATION

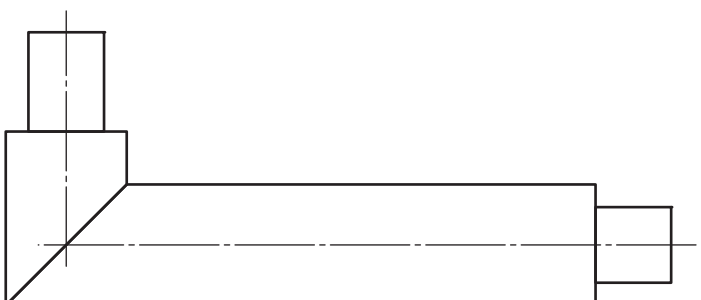


END ELEVATION

CRADLE



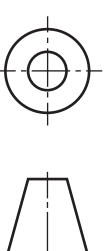
ELEVATION



END ELEVATION

SUPPORT ARM

DETAIL DRAWINGS
SCALE 1 : 1



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[END OF QUESTION PAPER]

SECTIONAL END ELEVATION ON A-A

ACKNOWLEDGEMENTS

Question 3—Photograph of a BlackBerry. Permission is being sought from BlackBerry, Research in Motion Ltd.