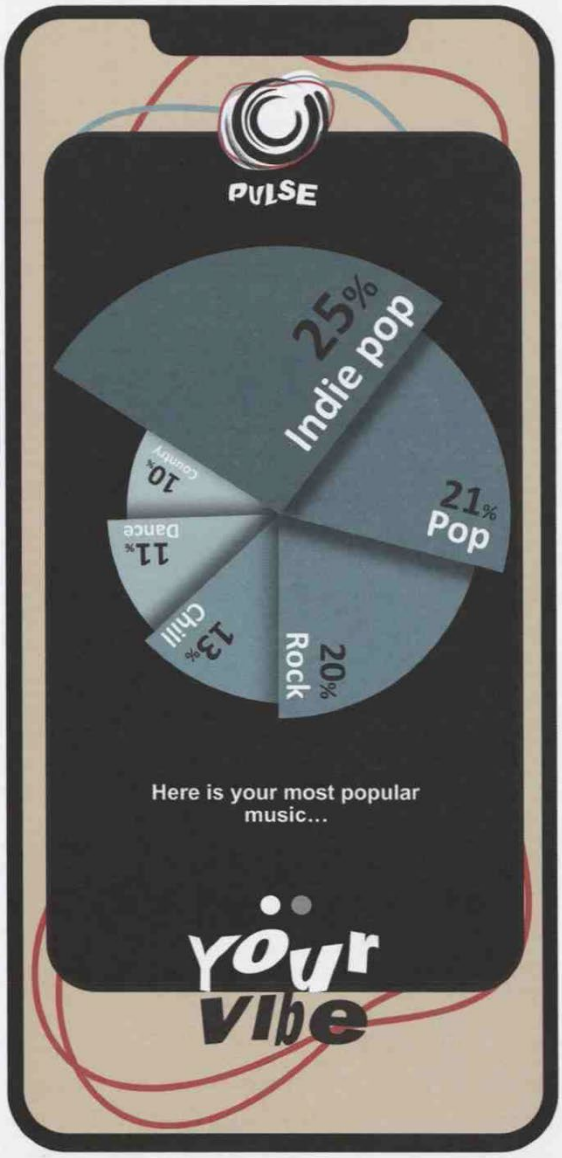
Candidate 4 evidence

DO NOT WRITE IN THIS MARGIN

Total marks — 80

Attempt ALL questions

1. Pulse is a music streaming app for smartphones. A screen from the app is shown below.



MARKS | DO NOT WRITE IN THIS MARGIN

1. (continued)

(a) The screen shows a user's most popular types of music listened to over a year.

(i) State the name of the chart used. 1

pie chart.

(ii) Explain why this chart is appropriate to communicate this information. 1

it shows percentages clearly.

(b) Describe three ways the graphic artist has graphically communicated the most popular types of music on the screen. 3

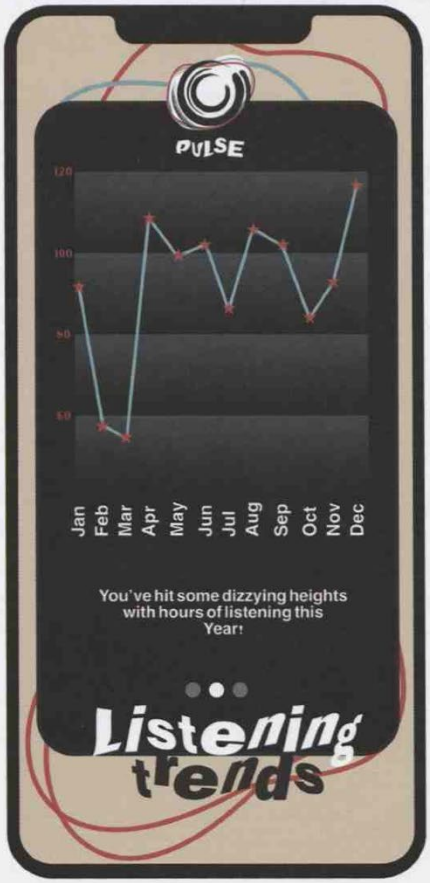
- The more popular genre is, the bigger its piece in size.
- The more popular genre is, the darker color its piece is coloured in.
- The more popular genre is, the bigger text it has (name & percentage).

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

1. (continued)

A second screen from the app is shown below.



(c) This graph shows the number of hours a user listened to music each month.

(i) State the name of the graph used above. 1

line graph.

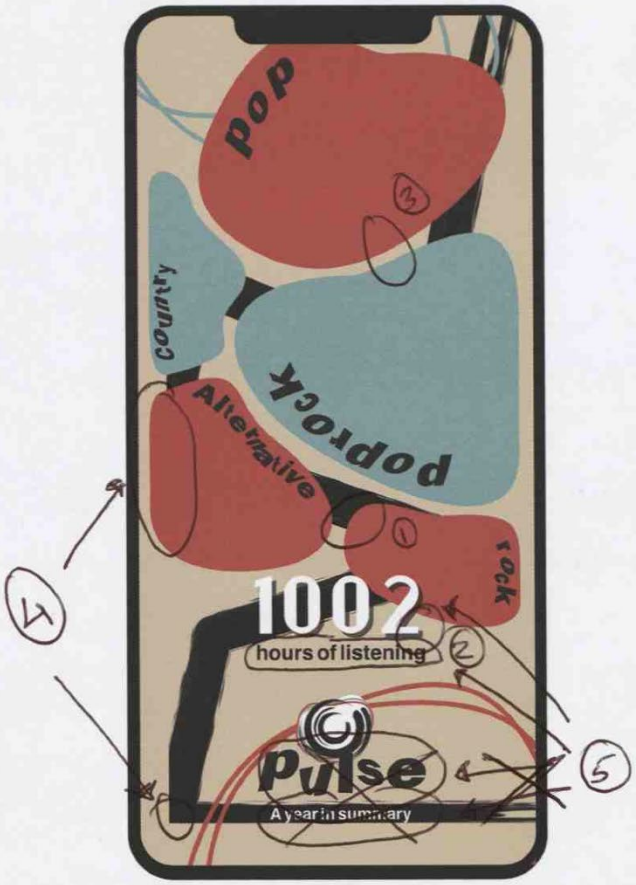
(ii) Explain why this graph is appropriate to communicate this information. 1

it is good at showing data flow.

MARKS | DO NOT WRITE IN THIS MARGIN

1. (continued)

A graphic layout showing another screen from the app is shown below.



(d) Describe **two** ways each of the following design elements and principles have been used in the layout:

① (i) **Depth** can be seen in objects overlaping. 2

② Depth can also be seen in dropshadow of the "£1002" text.

MARKS | DO NOT WRITE IN THIS MARGIN

1. (d) (continued)

(ii) Unity can be seen in repetitive use of sans-serif fonts. Unity can also be seen in repetitive use of red + green colours throughout the design — 2

(3) (iii) Contrast can be seen in use of contrasting colours (red + green). (4) Contrast can also be seen in shapes (round edges of red + green elements vs sharp edges of black line) — 2

(e) Describe one way alignment has been used in the layout. — 1

(5) Texts "hours of listening," ~~"1002"~~, ~~"False"~~ ~~out~~ and "002" are vertically alighed.

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

2. A landscape design company has produced graphics for a new garden studio shown below.



preliminary graphic



promotional graphic

(a) (i) Explain the purpose of a promotional graphic. 1

to show how the product looks like in real life, and promote it to target audience.

A digital version of the manual preliminary graphic is created.

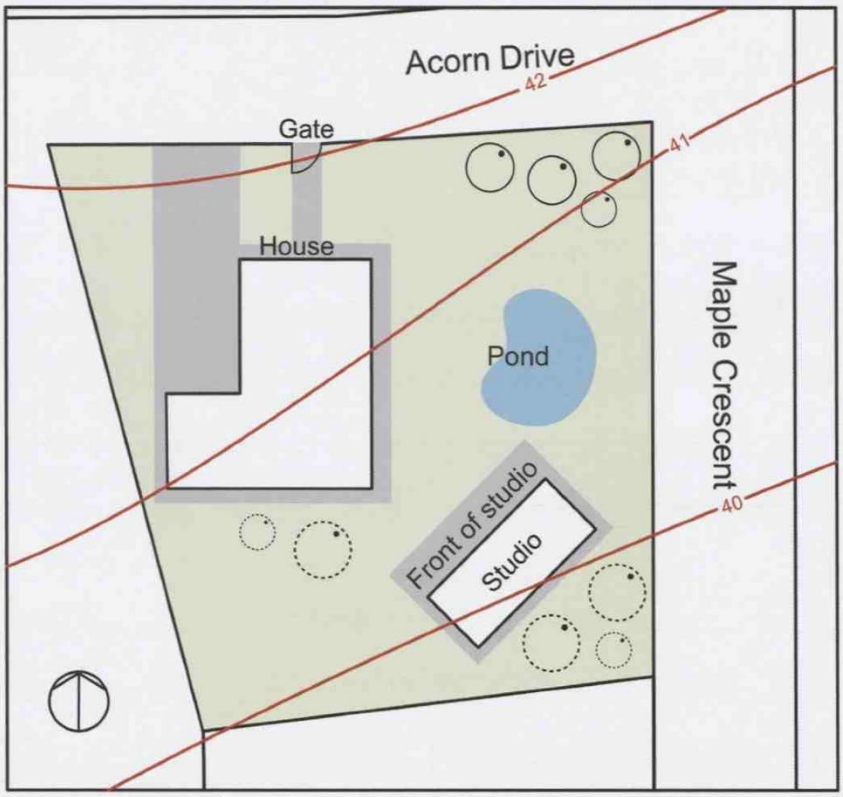
(ii) State the names of two input devices that could be used to convert the preliminary graphic into a digital file. 2

camera, scanner.

MARKS | DO NOT WRITE IN THIS MARGIN

2. (continued)

A site plan showing the proposed position of a garden studio is shown below.



(b) State a scale commonly used for a site plan. 1

1:200

(c) Contours are shown in red on the site plan.

Explain the purpose of contours on a site plan. 1

show different ground heights.

MARKS | DO NOT WRITE IN THIS MARGIN

2. (continued)

The front of the garden studio faces the house on the plot.

(d) State the direction the front of the garden studio faces. 1

north-west

(e) State the direction the pond is in relation to the house. 1

east

The site plan was produced by a designer who works from home.

(f) Describe two advantages of remote working. 2

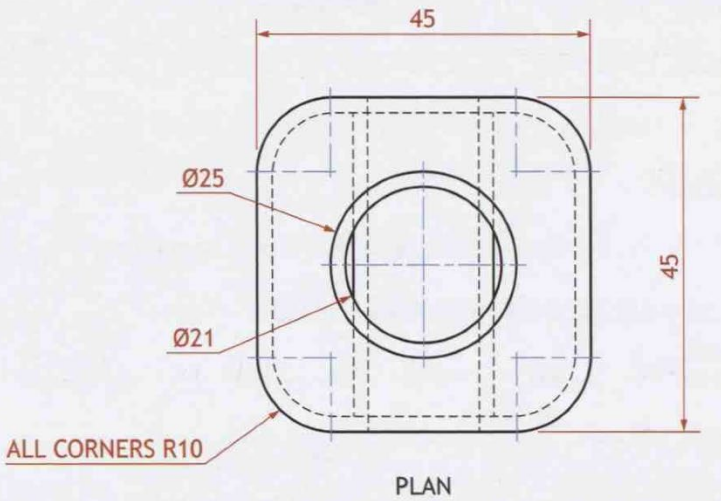
- Saves time on travelling to/from work.
- Designer can ~~have~~ be working online ~~meetings with people~~ from ~~all around~~ the world. any part of

[Turn over

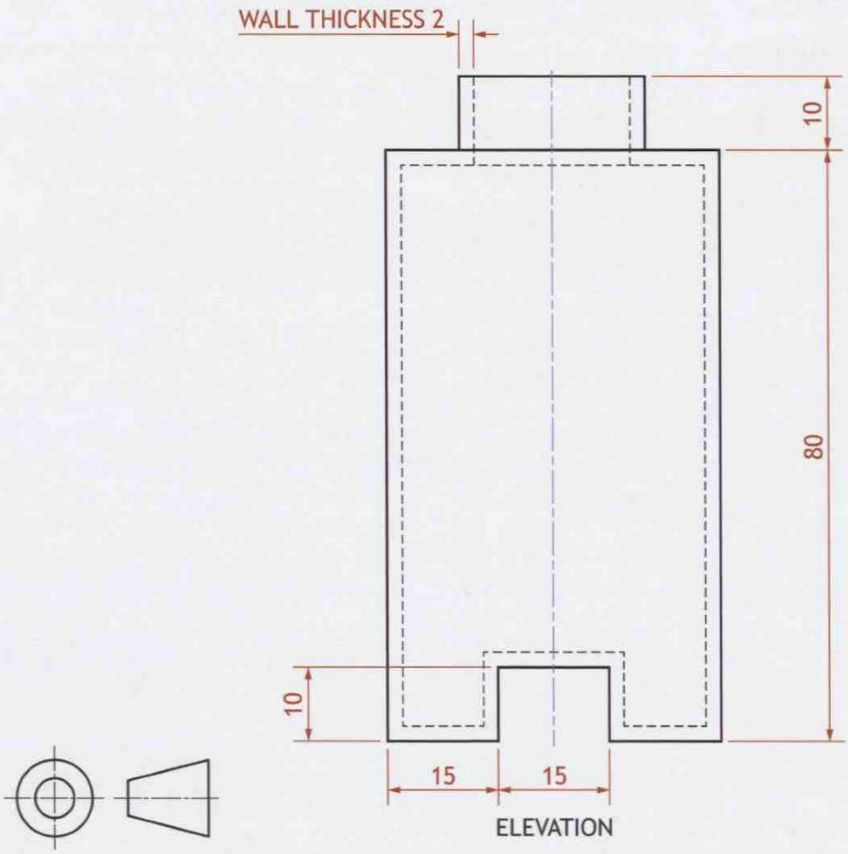
DO NOT WRITE IN THIS MARGIN

3. A company has created a new drinks bottle for their product line. It has two parts: a body and a lid.

An orthographic drawing of the body is shown below.



PLAN



ELEVATION

MARKS | DO NOT WRITE IN THIS MARGIN

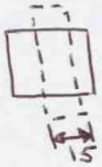
3. (continued)

(a) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the body.

You may use sketches to help support your answer. 6

1. Sketch a rectangular profile 45x45. Extrude by 80.

2. On the bottom surface sketch a rectangular profile 15 widths going through the middle. Extrude-subtract by 10.



3. On top surface sketch a circular profile Ø25. Extrude by 10.

4. Use fillet 10 on 4 vertical corners of the rectangle.



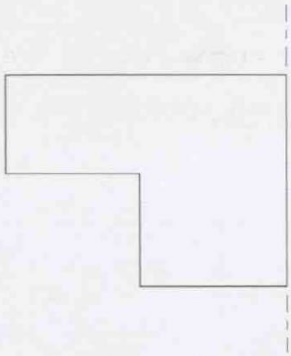
5. Shell everything by 4.

DO NOT WRITE IN THIS MARGIN

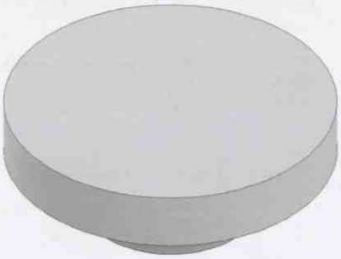
3. **(continued)**

The stages to create the 3D CAD model of the lid are shown below.

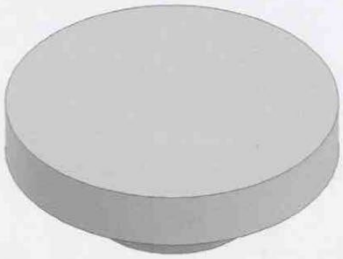
Stage 1



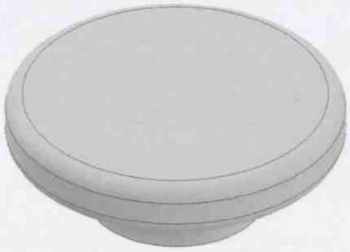
Stage 2



Stage 2



Stage 3



Stage 3



Stage 4



MARKS | DO NOT WRITE IN THIS MARGIN

3. (continued)

(b) (i) State the name of the 3D CAD command used to go from stage 1 to stage 2. 1

revolve

(ii) State the name of the 3D CAD edit used to go from stage 2 to stage 3. 1

fillet

(iii) State the name of the 3D CAD edit used to go from stage 3 to stage 4. 1

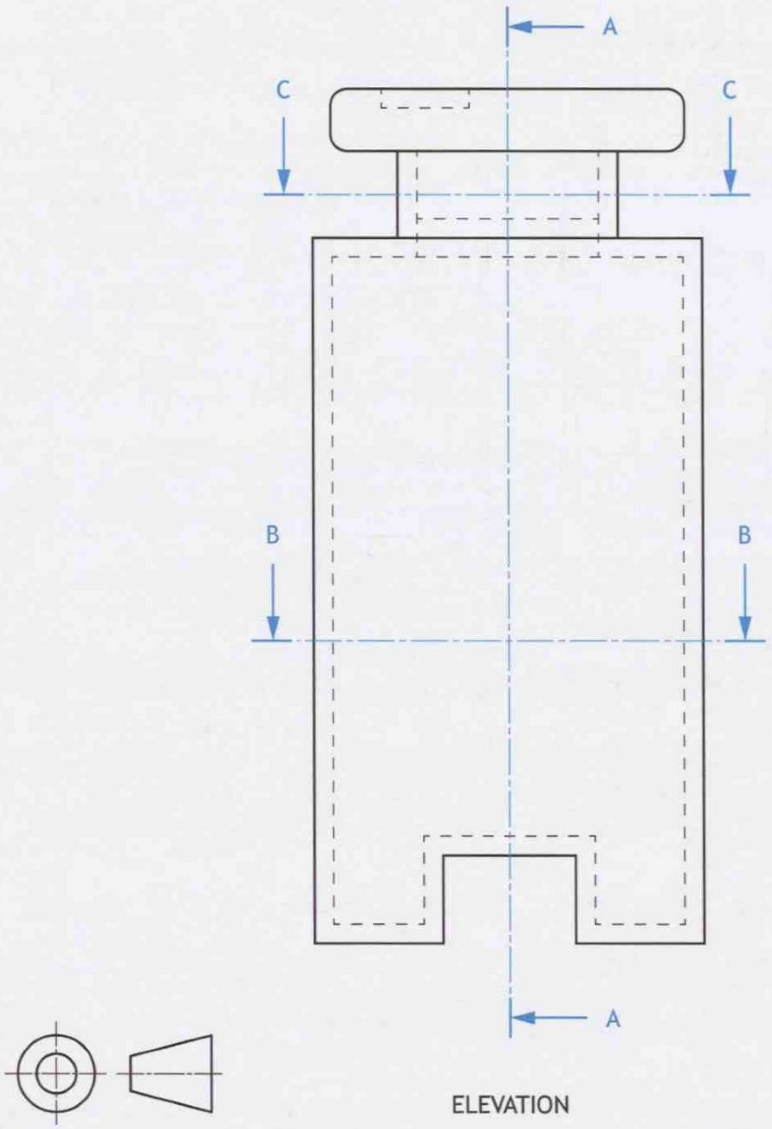
extrude subtract

[Turn over

DO NOT WRITE IN THIS MARGIN

3. **(continued)**

The elevation of the assembled bottle is shown below.



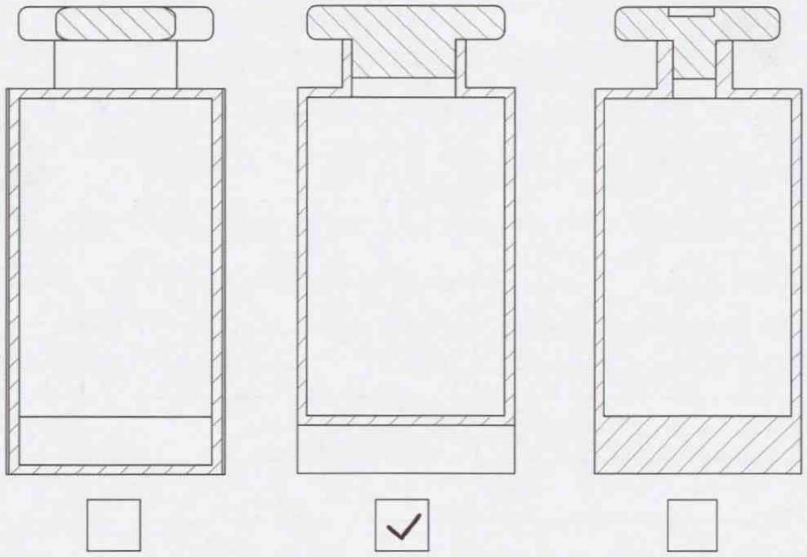
ELEVATION

3. (continued) MARKS DO NOT WRITE IN THIS MARGIN

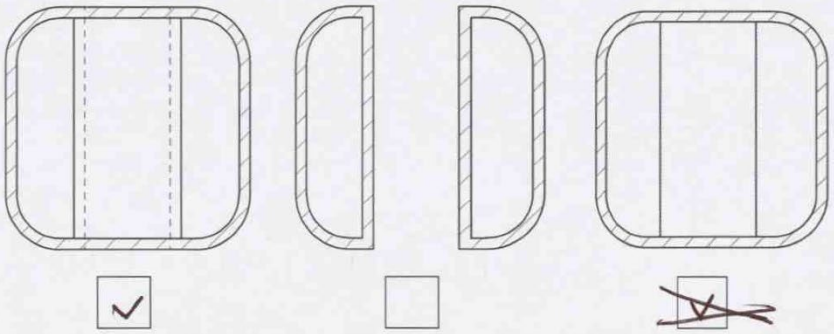
(c) Three sectional views projected from the elevation are shown below.

Identify the correct sectional view for each cutting plane by ticking (✓) a box below.

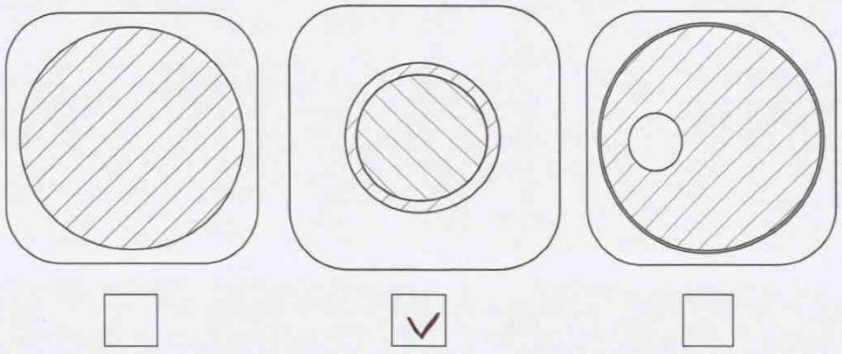
(i) Cutting plane A–A 1



(ii) Cutting plane B–B 1



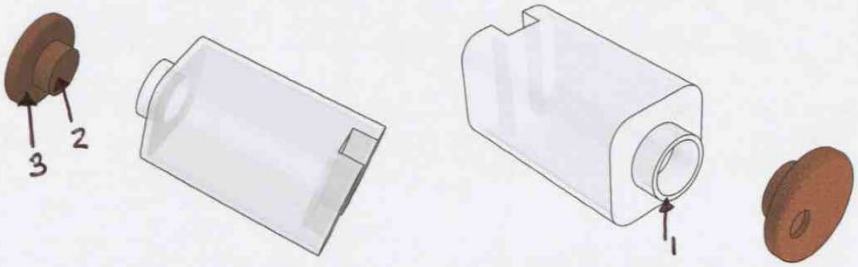
(iii) Cutting plane C–C 1



MARKS | DO NOT WRITE IN THIS MARGIN

3. (continued)

The bottle parts were assembled using 3D CAD assembly techniques.



(d) Describe, using 3D CAD constraints, how to assemble the bottle and lid.
You may annotate the graphic shown above to support your answer. 2

• Select ① and ② centre axises ~~and~~ and use center axis.
• Select ① and ③ and use mate.

MARKS | DO NOT WRITE IN THIS MARGIN

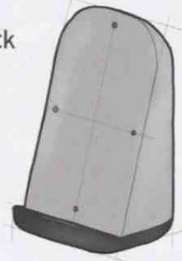
4. A designer has created manual preliminary sketches for a smartphone charging dock.

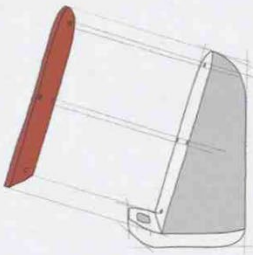
(a) Describe **two** reasons for creating preliminary sketches. 2

- to share ideas by quickly producing rough sketches.
- to gather feedback from the client.

The designer created more preliminary sketches using digital methods. Two of the preliminary sketches are shown below.

charging dock concept





dock with detachable face plate

(b) Describe **two** advantages of creating digital sketches over manual methods. 2

- Can be easily shared through email etc.
- Objects can be switched to final versions to create a final layout.

(c) The designer displays their work in an online portfolio.

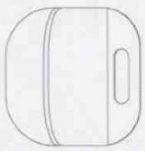
Explain **two** benefits to the designer of having their portfolio published online rather than being printed. 2

- Can be accessed from anywhere through a mobile device, no need to walk anywhere.
- Interactive links or videos/gif can be added to the portfolio online.

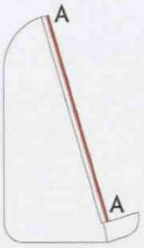
MARKS | DO NOT WRITE IN THIS MARGIN

4. (continued)

An orthographic drawing and rendered pictorial view of the charging dock are shown below.

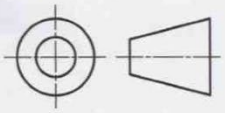


PLAN

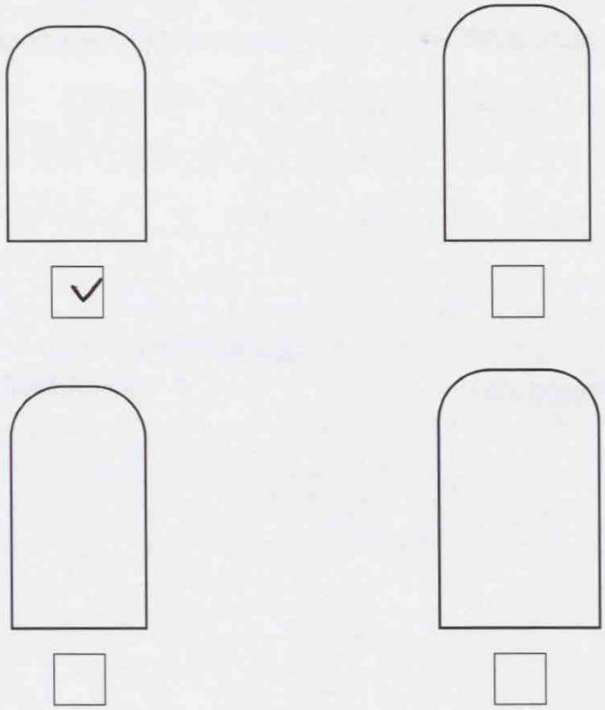


ELEVATION





(d) Identify the correct true shape of the sloping surface A–A by ticking (✓) a box below. 1

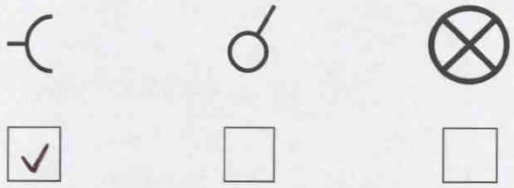


MARKS | DO NOT WRITE IN THIS MARGIN

4. (continued)

(e) The charging dock will be connected to a socket.

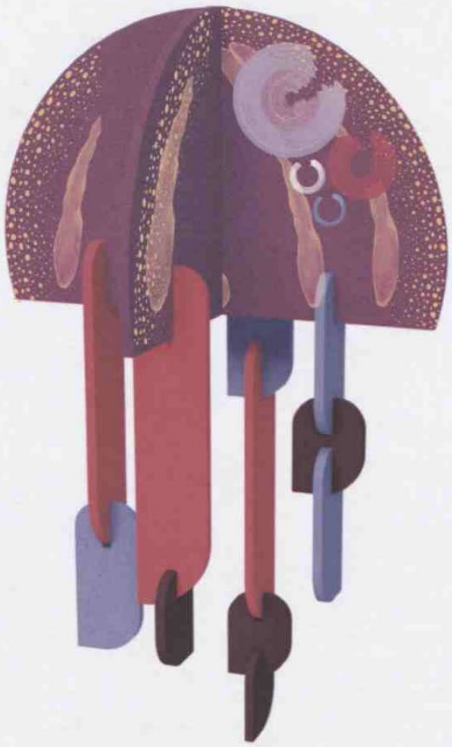
Identify the correct British Standard symbol for a socket by ticking (✓) a box below. 1



[Turn over

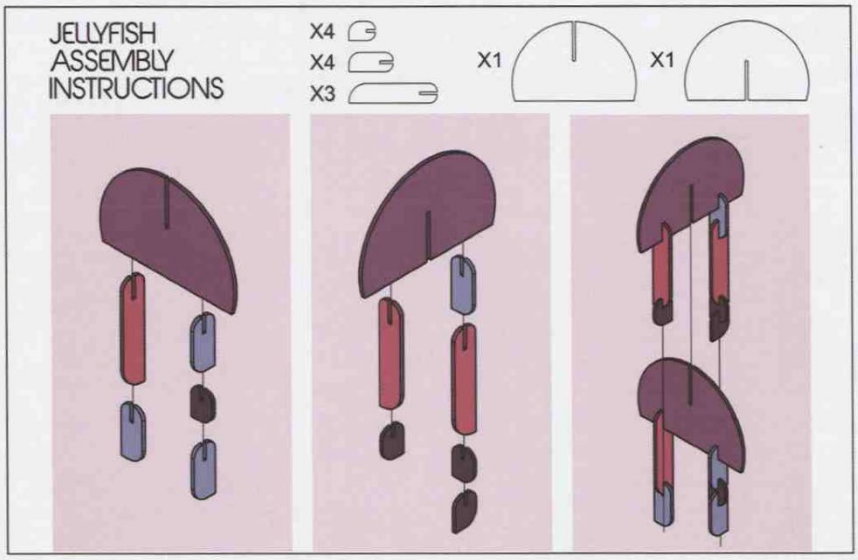
DO NOT WRITE IN THIS MARGIN

5. A manufacturer has produced a range of toys. A 3D CAD illustration of a jellyfish toy is shown below.



jellyfish toy

The assembly instructions for the jellyfish toy are shown below.

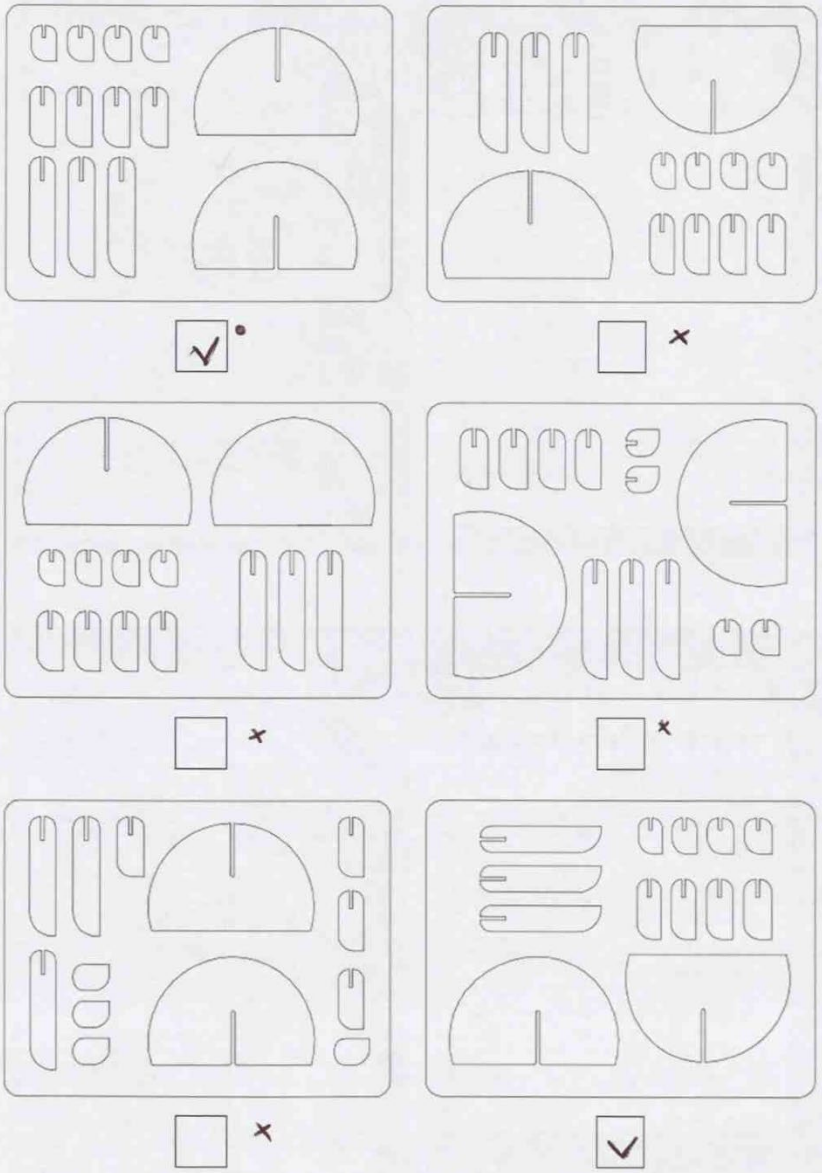


MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

(a) The jellyfish toy parts are cut out from one sheet of material. Some layouts are shown below.

Identify the **two** correct layouts by ticking (✓) **two** boxes. 2



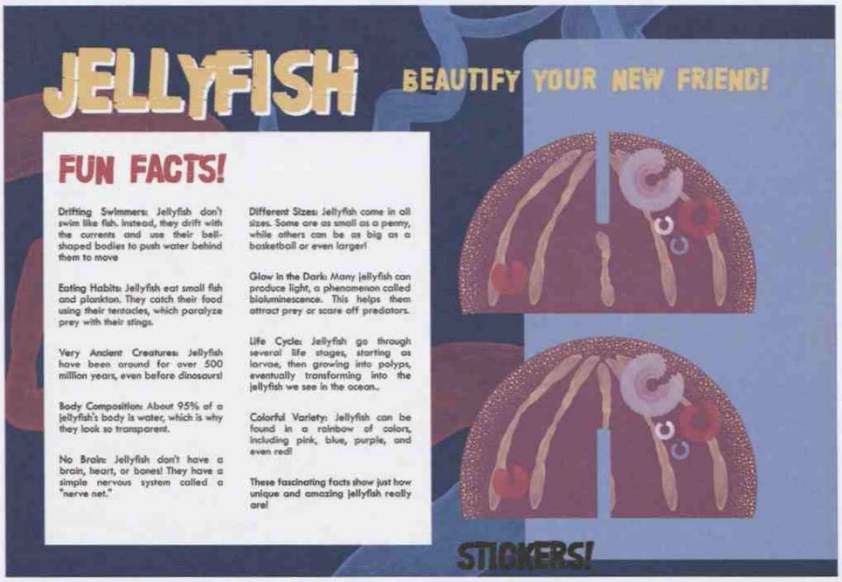
[Turn over

DO NOT WRITE IN THIS MARGIN

5. (continued)

The jellyfish toy is sold with a sticker fact sheet. The first draft, and final layout of the graphics are shown below.

Draft layout



Final layout



MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

(b) State the names of the DTP edits, A to D, applied to the final layout, shown opposite.

Do not refer to scaling or resizing in your answer, and you must give a different answer for each response.

(i) Edit A to the 'fun facts' text: drop shadow 1

(ii) Edit B to the white box: transparency 1

(iii) Edit C to the 'STICKERS' text: reverse 1

(iv) Edit D to the 'BEAUTIFY YOUR NEW FRIEND' text: text flow along a path 1

(c) Describe, giving two reasons, the effect yellow-orange has on the title. 2

- Creates happy mood because ~~it~~ the color ~~is~~ is associated with joy + sun.
- Makes it look closer because it is an advancing color.

Colours were selected by referring to the colour wheel.

(d) Complete the table below stating whether the colours are primary, secondary or tertiary. 3

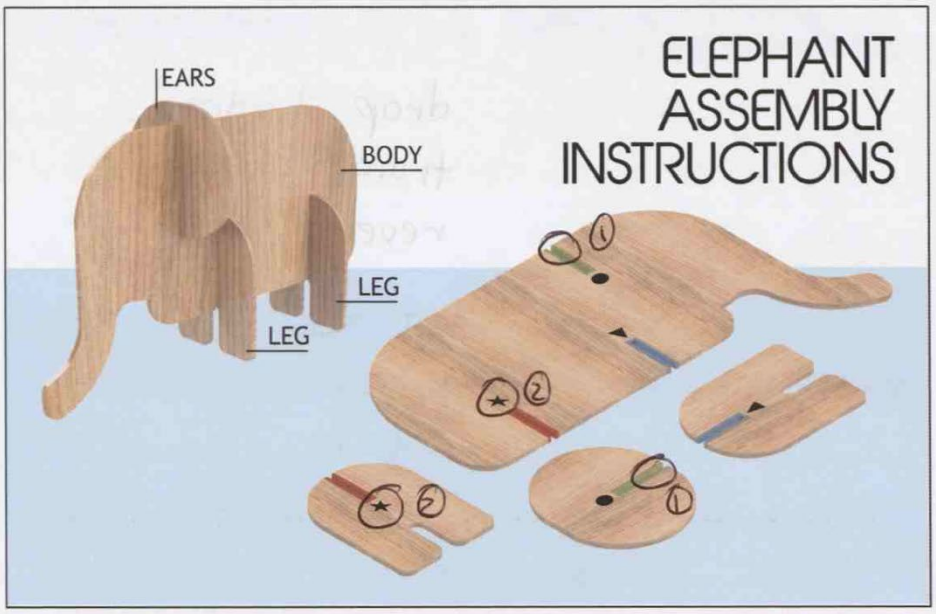
Colour	Primary, Secondary or Tertiary
Purple	secondary
Blue	primary
Yellow-orange	tertiary

[Turn over

MARKS | DO NOT WRITE IN THIS MARGIN

5. (continued)

Assembly instructions for an elephant toy are shown below.



(e) Identify two features of the assembly instructions that make them easy to understand. 2

① • Color coding ~~cuct~~ tells which part goes where.

② • Shapes act as a leeg and also tell which part goes where.

MARKS | DO NOT WRITE IN THIS MARGIN

6. A rendered 3D CAD illustration of a bottle holder is shown below.



(a) State the name of **two** CAD Illustration techniques that have been applied to the model. 2

- Materials.
- Highlights, Lighting & shadows.

(b) Explain **one** effect CAD illustration techniques have on 3D models. 1

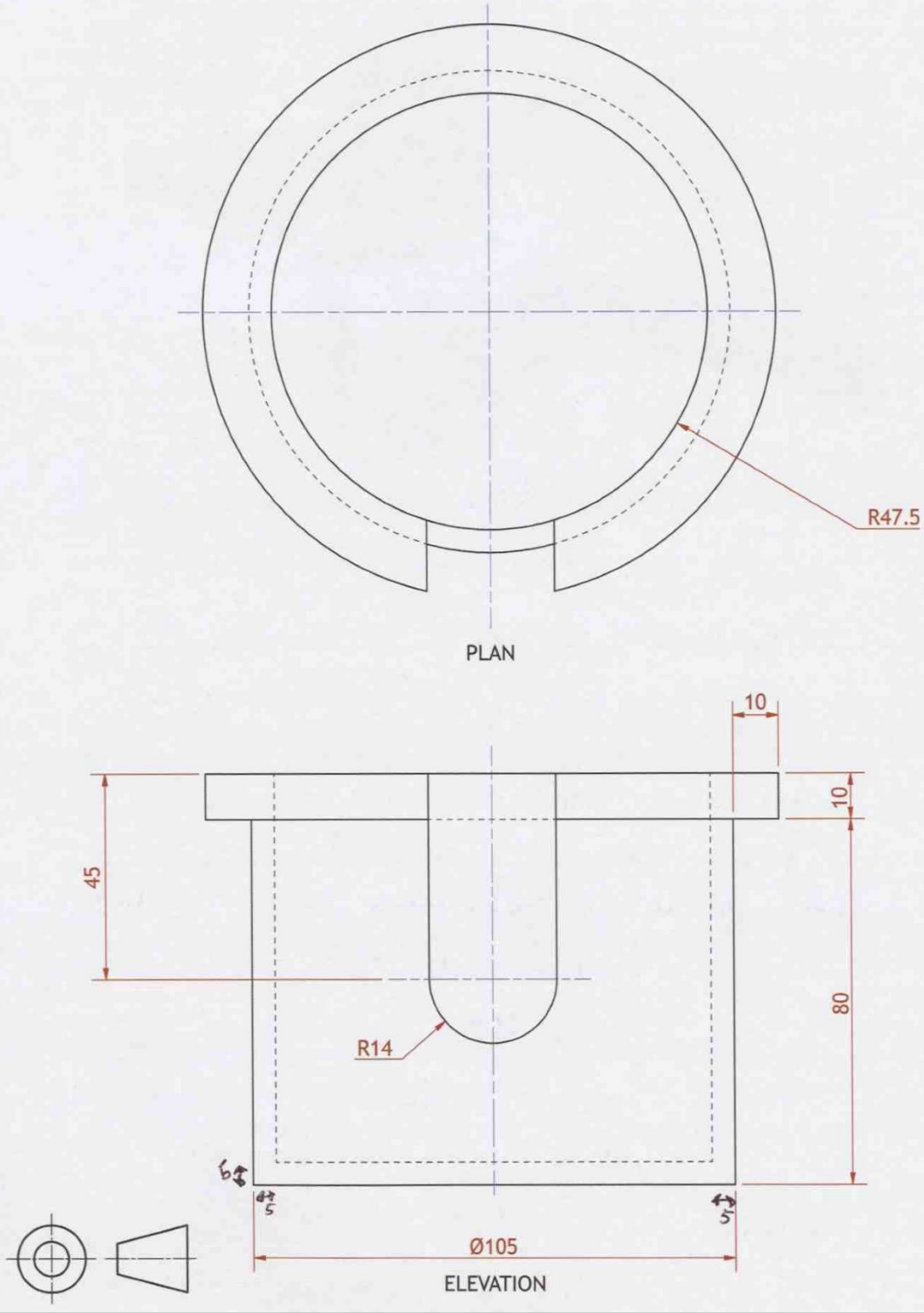
~~• Shows how~~ they ~~do~~ ~~look in~~ real life. • Makes them look more realistic.

[Turn over

6. (continued)

DO NOT WRITE IN THIS MARGIN

An orthographic drawing of one of the bottle holder components is shown below.



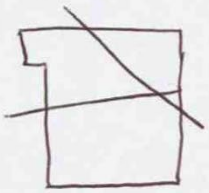
MARKS | DO NOT WRITE IN THIS MARGIN

6. (continued)

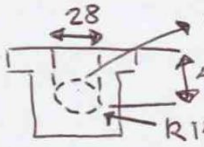
(c) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the bottle holder.

You may use sketches to support your answer. 5

1. Using line sketch the following profile with dimensions:



1. Sketch a circular profile Ø125.
   Extrude by 10.
2. On the bottom surface sketch a circular profile Ø105.
   Extrude by 80.
3. On the top surface sketch a circular profile Ø95.
   Extrude subtract by 75.
4. On a vertical plane sketch the following profile with rectange & ellipse tool:



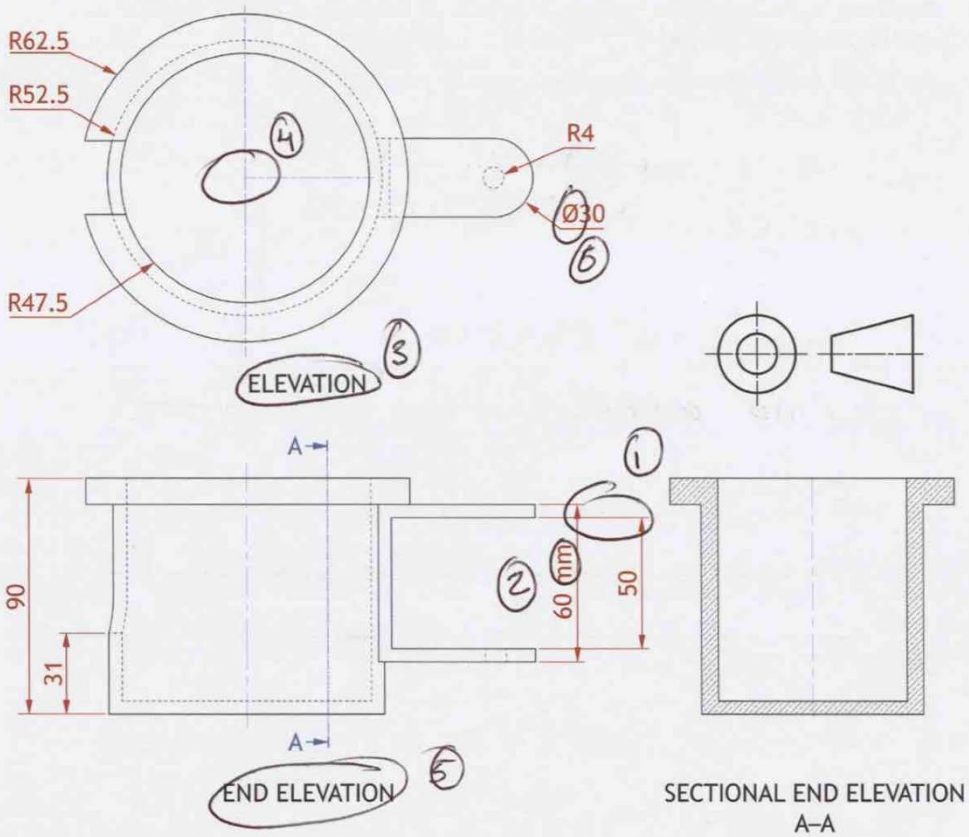
use trim to get rid of half circle.

5. Extrude subtract it in one direction. (for more than 62.5)

6. (continued)

MARKS | DO NOT WRITE IN THIS MARGIN

An orthographic drawing of the assembled bottle holder is shown below.



The orthographic drawing contains errors that do not conform to British Standards.

(d) Identify six errors in the orthographic drawing. 6

You may annotate the drawing to support your answer.

1 • dimensions should be in order smallest → biggest and smallest on the inside.

2 • "mm" is not needed.

3 • elevation is not the correct name for the views.

4 • Centre line is not finished.

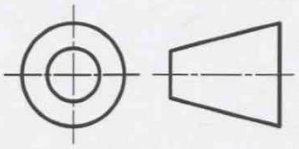
5 • end elevation is not the correct name for the view.

6 • Its not Ø30 but R15 for ~~fillet~~ round corners.

MARKS | DO NOT WRITE IN THIS MARGIN

6. (continued)

A title block will be added to the final orthographic drawing. The title block will include the symbol shown below.



(e) (i) Describe the purpose of this symbol. 1

to show that third angle projection was used

(ii) State **three** other pieces of information that should be included in a title block. 3

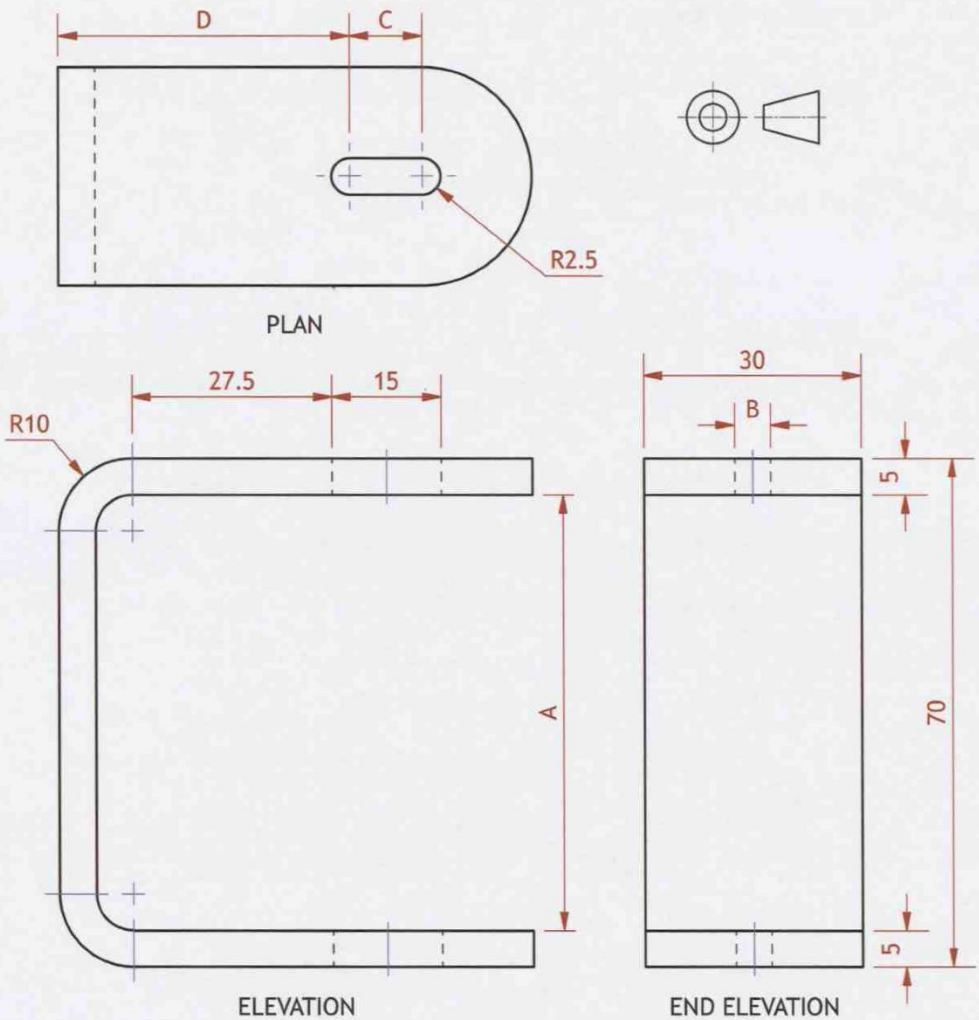
title, date, scale.

[Turn over

6. (continued)

MARKS | DO NOT WRITE IN THIS MARGIN

An updated orthographic drawing of another component from the bottle holder is shown below.



(f) Calculate the missing dimensions, A to D, from the orthographic drawing. 4

A = 60 mm

B = 5 mm

C = 10 mm

D = ~~37.5~~ 40 mm

[END OF QUESTION PAPER]