



FOR OFFICIAL USE

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National
Qualifications
2021 ASSESSMENT RESOURCE

Mark

X835/75/01

Graphic Communication

Duration — 1 hour 30 minutes



* X 8 3 5 7 5 0 1 *

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

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Month

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Year

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Scottish candidate number

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Total marks — 65

Attempt ALL questions.

All dimensions are in mm.

All technical sketches and drawings use third angle projection.

You may use rulers, compasses or trammels for measuring.

In all questions you may use sketches and annotations to support your answer if you wish.

Write your answers clearly in the spaces provided in this booklet. Additional space for answers is provided at the end of this booklet. If you use this space you must clearly identify the question number you are attempting.

Use blue or black ink.

Before leaving the examination room you must give this booklet to the Invigilator; if you do not, you may lose all the marks for this paper.



* X 8 3 5 7 5 0 1 0 1 *

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* X 8 3 5 7 5 0 1 0 2 *

Total marks — 65

Attempt ALL questions

1. Rendered 3D CAD illustrations of a sports drink bottle are shown below.



- (a) Explain why the designer used the colour combination of red and white.

1

- (b) Explain why showing the **rubber textured grip** in the graphics is useful for the consumer.

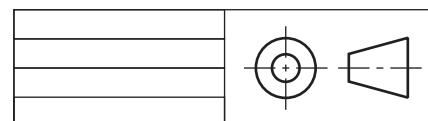
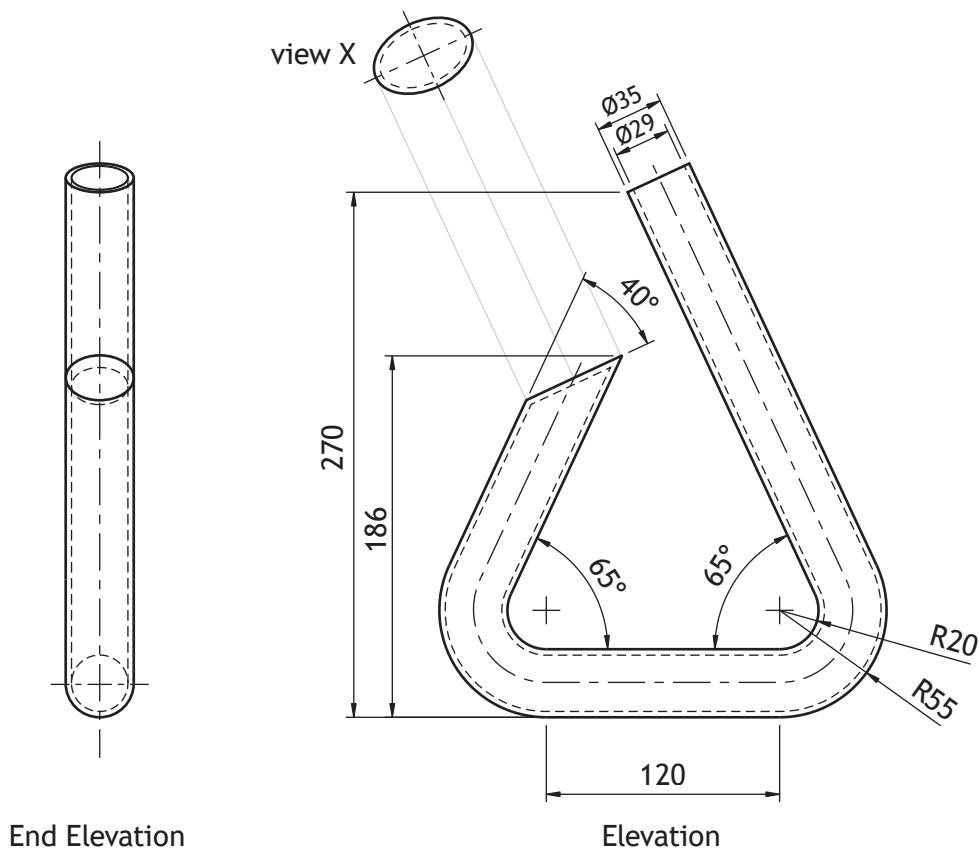
1

[Turn over



1. (continued)

An orthographic component drawing of the body of the sports drink bottle is shown below.



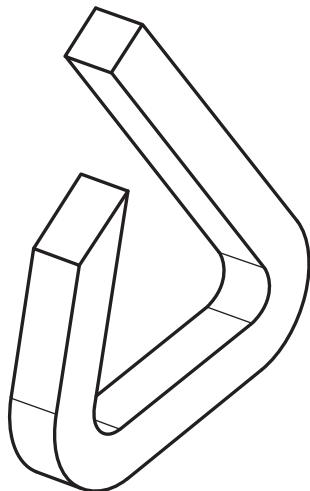
1. (continued)

MARKS

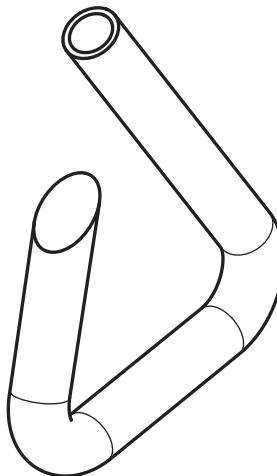
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The body of the sports drink bottle was modelled using 3D CAD modelling software.

A pictorial line drawing of the initial extrusion and completed model is shown below.



initial extrusion



completed model

- (c) Describe, using the dimensions from the orthographic component drawing and 3D CAD modelling terms, how you would use 3D CAD software to complete the body of the bottle. You may annotate the line drawing and use sketches to support your answer.

3



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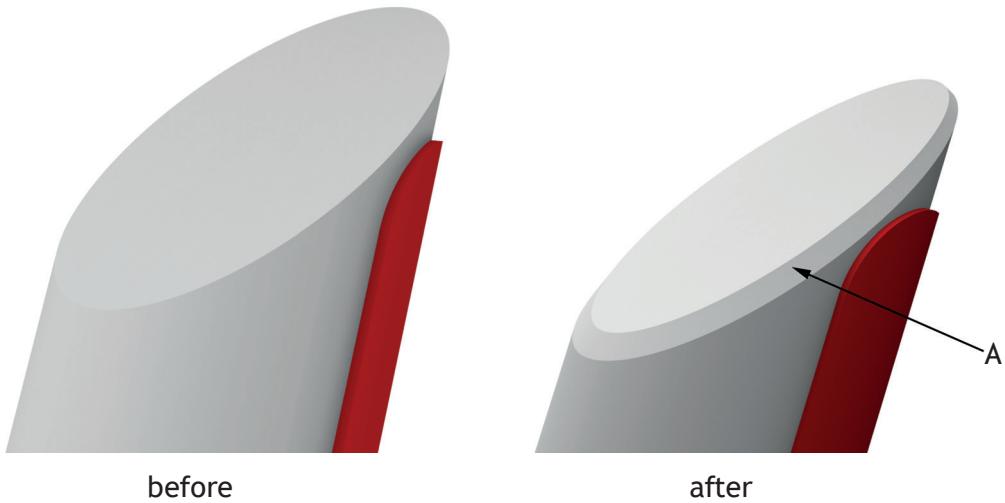
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* X 8 3 5 7 5 0 1 0 6 *

1. (continued)

A final edit was made to the sports drink bottle before it was manufactured.



- (d) State the name of the 3D CAD edit shown at A.

1

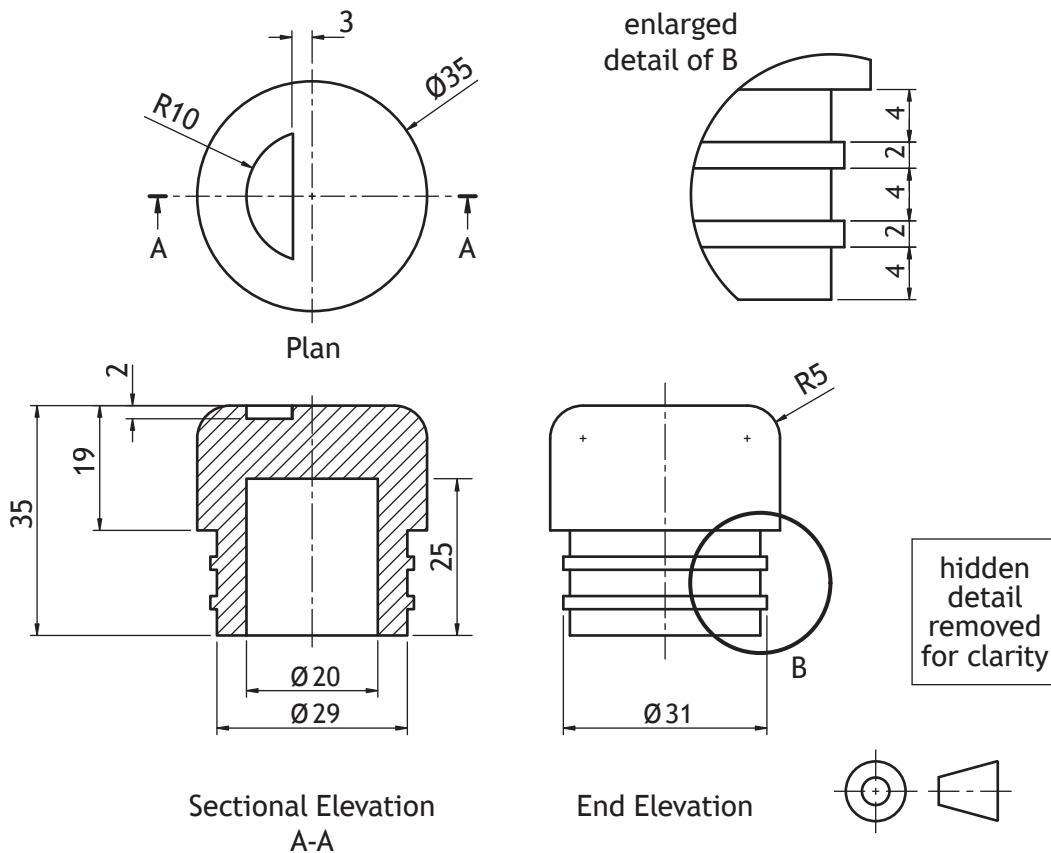
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* X 8 3 5 7 5 0 1 0 7 *

1. (continued)

An orthographic drawing of the sports drink bottle lid is shown below.



* X 8 3 5 7 5 0 1 0 8 *

1. (continued)

- (e) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the lid of the sports drink bottle. You may use sketches to support your answer.

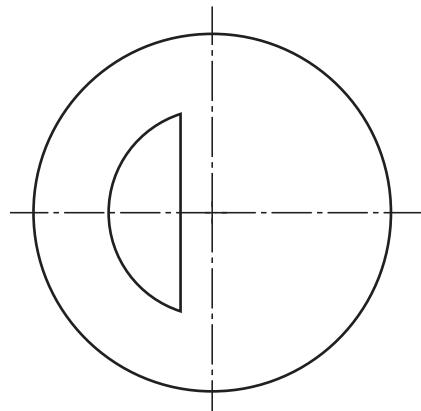
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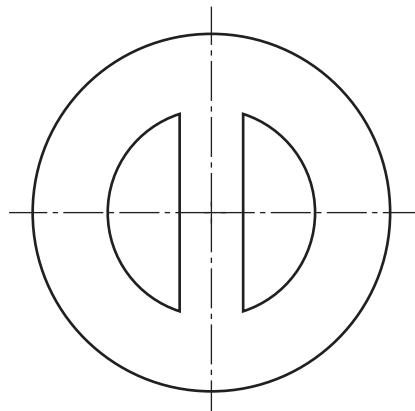
* X 8 3 5 7 5 0 1 0 9 *

1. (continued)

The detail on top of the lid of the sports drink bottle was then edited, as shown below.



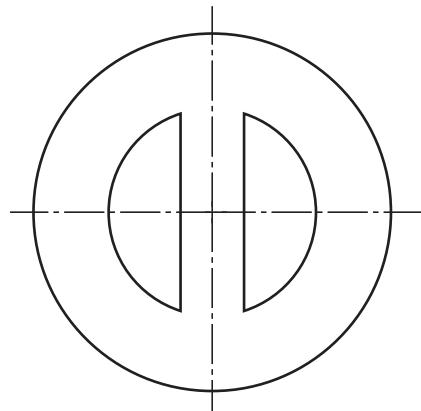
before



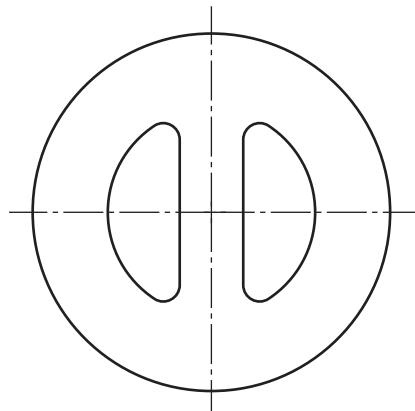
after

- (f) State the name of the 2D CAD tool used to make the edit.

1



before



after

- (g) State the name of the 2D CAD tool used to make the edit.

1



* X 8 3 5 7 5 0 1 1 0 *

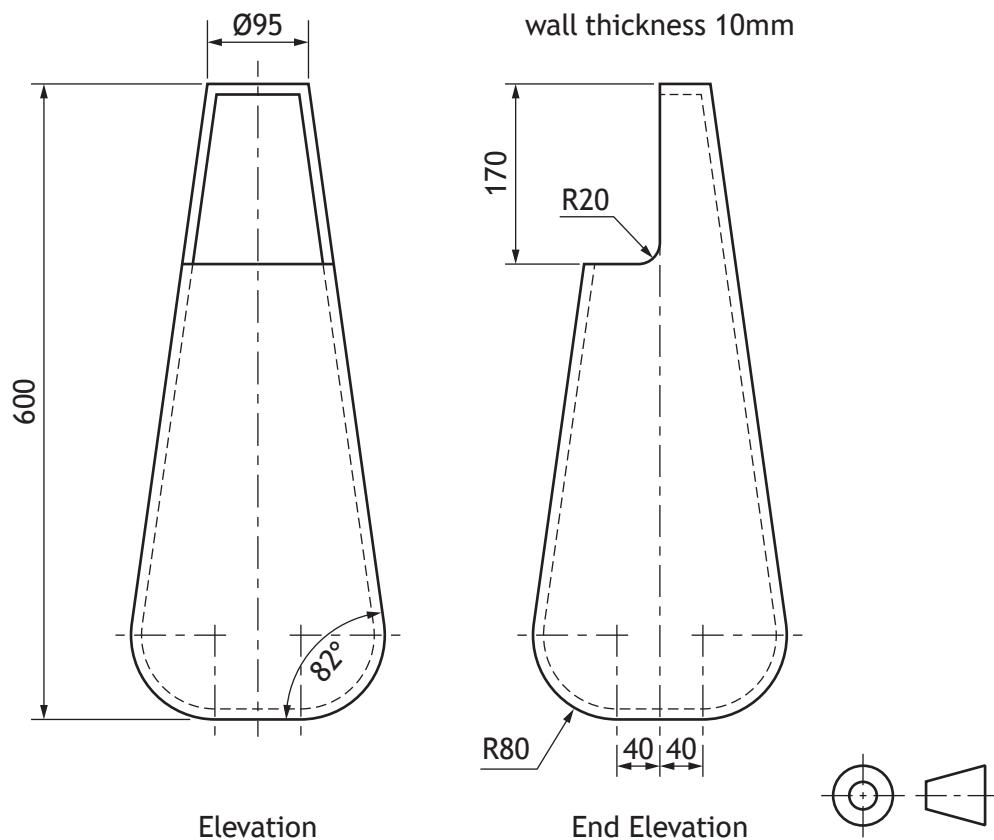
[Turn over for next question

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* X 8 3 5 7 5 0 1 1 1 *

2. A CAD technician produced the orthographic drawing of a vase shown below.



- (a) Explain why a sectional end elevation is not required for the orthographic drawing.

1



2. (continued)

- (b) Describe, using the correct dimensions and 3D CAD modelling terms, how you would use 3D CAD software to model the vase. You may use sketches to support your answer.

6



* X 8 3 5 7 5 0 1 1 3 *

2. (continued)

The CAD technician rendered the CAD model of the vase to make it more realistic, as shown below.



CAD model



rendered CAD model

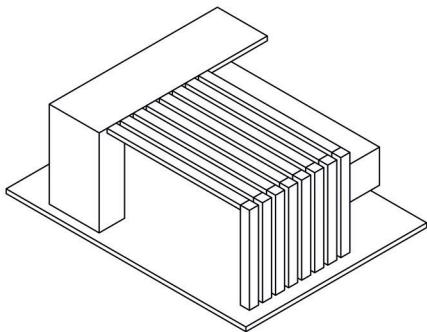
- (c) Identify **two** computer aided rendering techniques that have been applied to the model.

2



* X 8 3 5 7 5 0 1 1 4 *

3. Two pictorial graphics of a modern bandstand are shown below.



isometric line drawing



rendered 3D CAD
illustration

- (a) Explain **two** advantages to the public of the rendered 3D CAD illustration in comparison to the isometric line drawing.

2

- (b) Preliminary graphics for the bandstand were produced using digital techniques.

2

- (i) State the name of **two** digital devices that could be used to convert a manual sketch into a digital file.

- (ii) State the name of a DTP technique that is used to remove the background of an image.

1

- (c) Describe **two** disadvantages of using digital techniques.

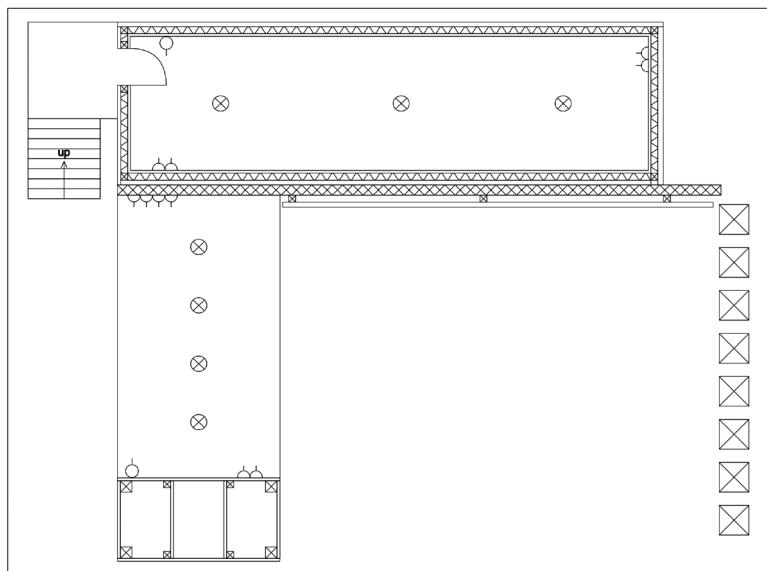
2



* X 8 3 5 7 5 0 1 1 5 *

3. (continued)

A plan of the bandstand is shown below.



- (d) Describe **two** ways a CAD library can assist in the production of a plan.

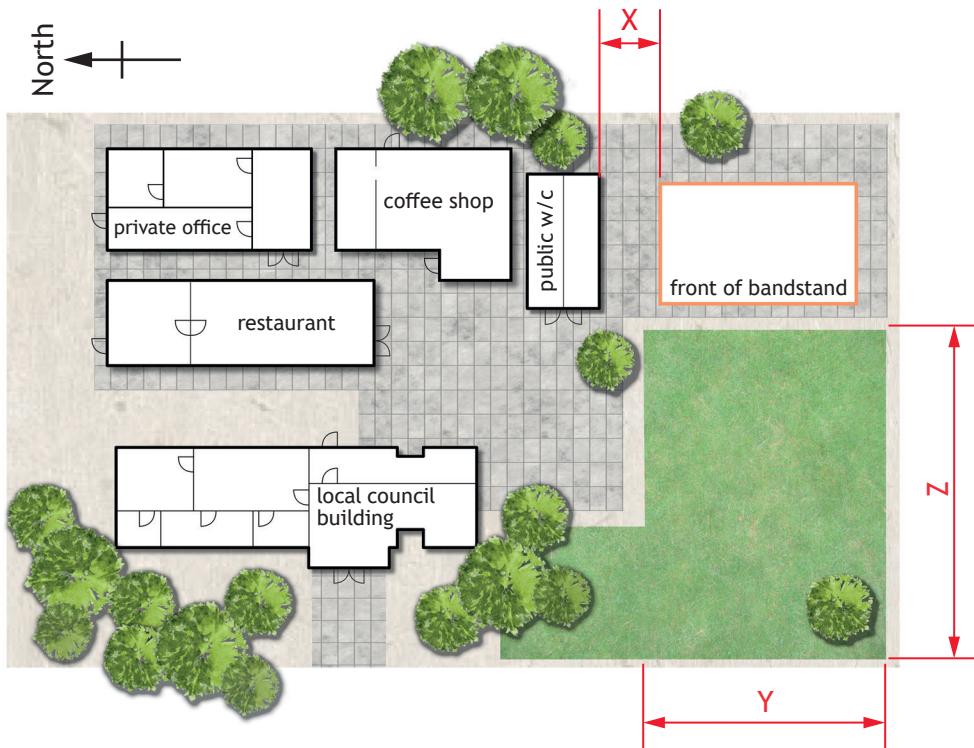
2



* X 8 3 5 7 5 0 1 1 6 *

3. (continued)

A site plan of the bandstand is shown below.



Scale 1:200

(e) Calculate, using the scale, the following distances.

- | | |
|---|---|
| (i) Distance X _____ metres | 1 |
| (ii) Distance Y _____ metres | 1 |
| (iii) Distance Z _____ metres | 1 |
| (f) (i) State the first building that is directly north of the bandstand. | 1 |

(ii) State the first building that is directly north-west of the bandstand.

[Turn over



* X 8 3 5 7 5 0 1 1 7 *

4. A slide presentation is shown below.

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CONTENTS

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- Add text here**
Nulla quis nibh. Proin ac pede vel ligula facilisis gravida. Phasellus purus. Etiam
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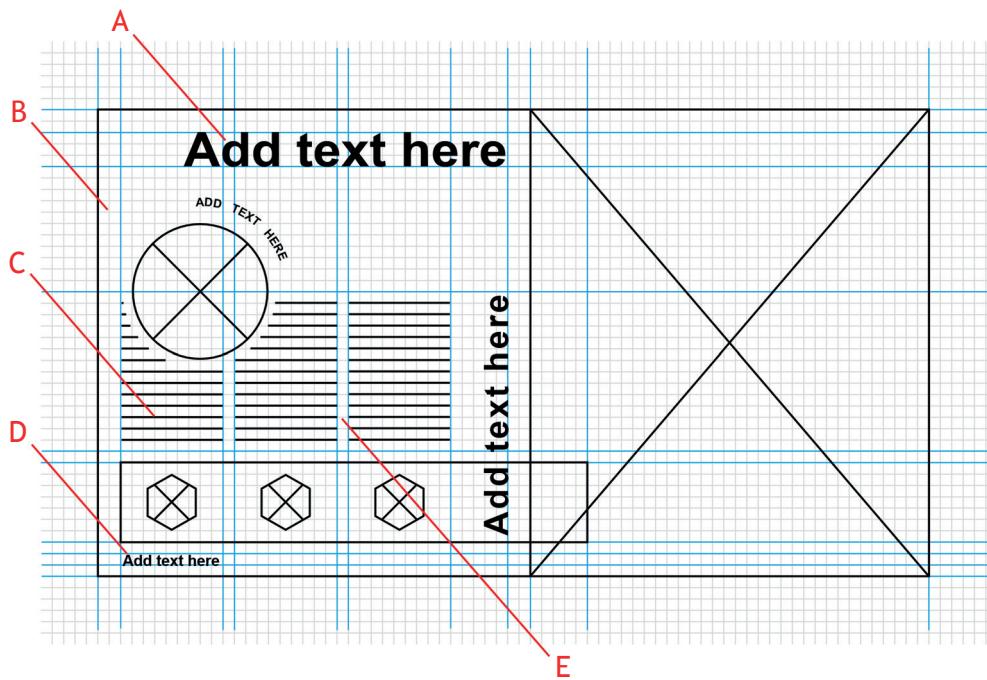


4. (continued)

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Before the final version of each slide was produced the graphic designer created electronic thumbnail layouts. One of the thumbnails is shown below.



- (a) Describe **two** advantages that electronic thumbnails give the designer over manual thumbnails.

2

There are a number of DTP layout features in the thumbnail.

- (b) State the name of the following features.

5

Feature A _____

Feature B _____

Feature C _____

Feature D _____

Feature E _____



4. (continued)

The final layout of the slide is shown below. The text and the images that are used in the slide have been laid out in their original form at the bottom of the page.

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Times Square

Final layout of slide

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A

B

C

D

E

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Original form of text and images



4. (continued)

- (c) State the name of the DTP edit that has been applied to each of the items to alter them from their original form to the state shown in the final layout.

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

5

Edit A _____

Edit B _____

Edit C _____

Edit D _____

Edit E _____

The slide presentation will be viewed electronically and will not be printed.

- (d) Describe **two** features that can be used in electronic presentations that would not be possible in a printed version.

2

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* X 8 3 5 7 5 0 1 2 1 *

4. (continued)

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The graphic designer has used a number of layout elements and principles in the slide shown below.



- (e) Describe two ways the designer has applied the following elements and principles.

You must give a different answer for each response.

(i) Contrast _____ 2

(ii) Unity _____ 2

(iii) Depth _____ 2



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4. (e) (continued)

(iv) Alignment _____

2

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* X 8 3 5 7 5 0 1 2 3 *

5. You must use the additional information provided on the supplementary sheet for use with question 5 to answer this question.

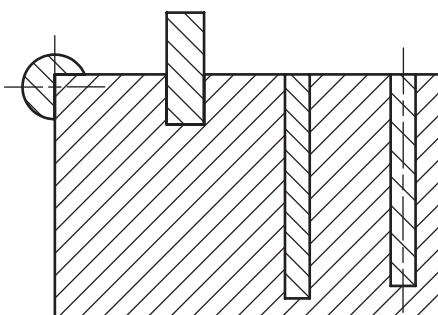
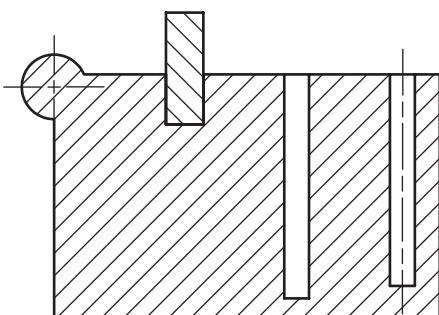
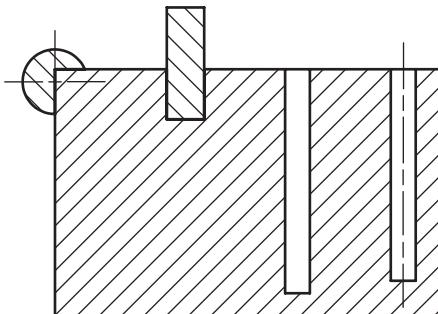
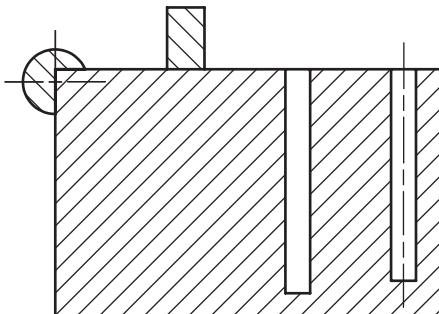
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A design for a desk tidy has been produced. The desk tidy consists of three main components: the tape cutter, tape peg and body.

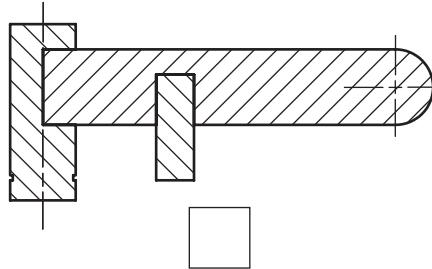
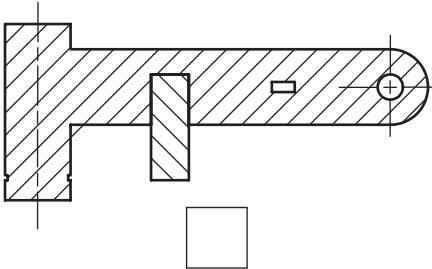
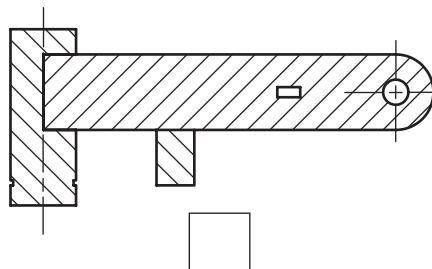
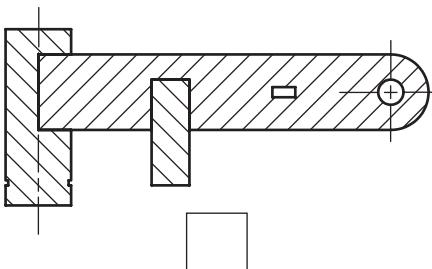
- (a) Identify the correct sectional view A-A by ticking (✓) a box below.

1



- (b) Identify the correct sectional view B-B by ticking (✓) a box below.

1

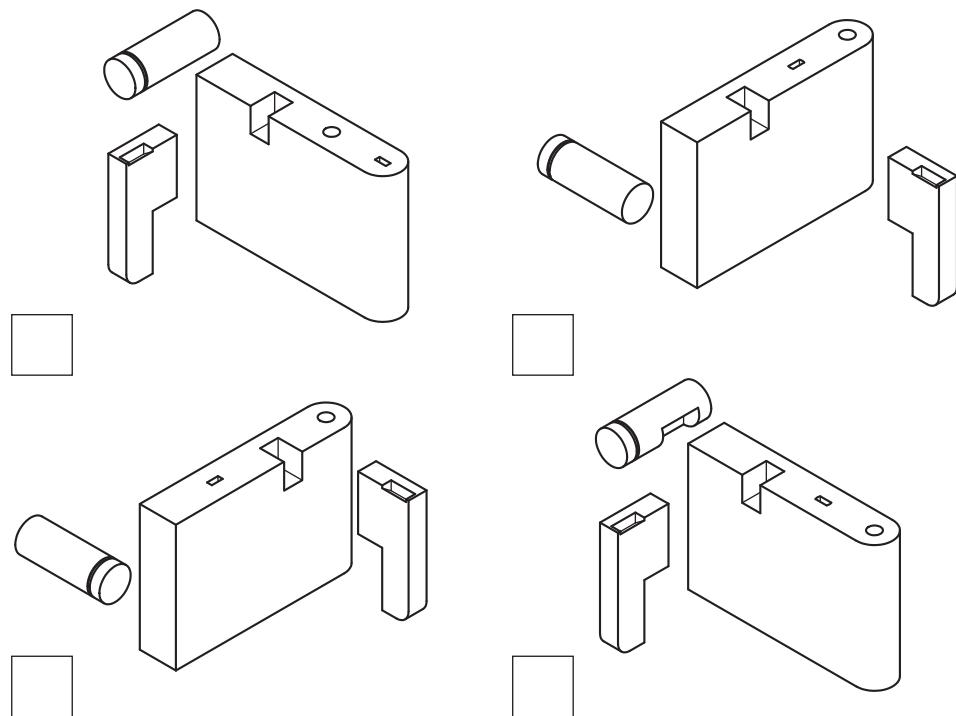


* X 8 3 5 7 5 0 1 2 4 *

5. (continued)

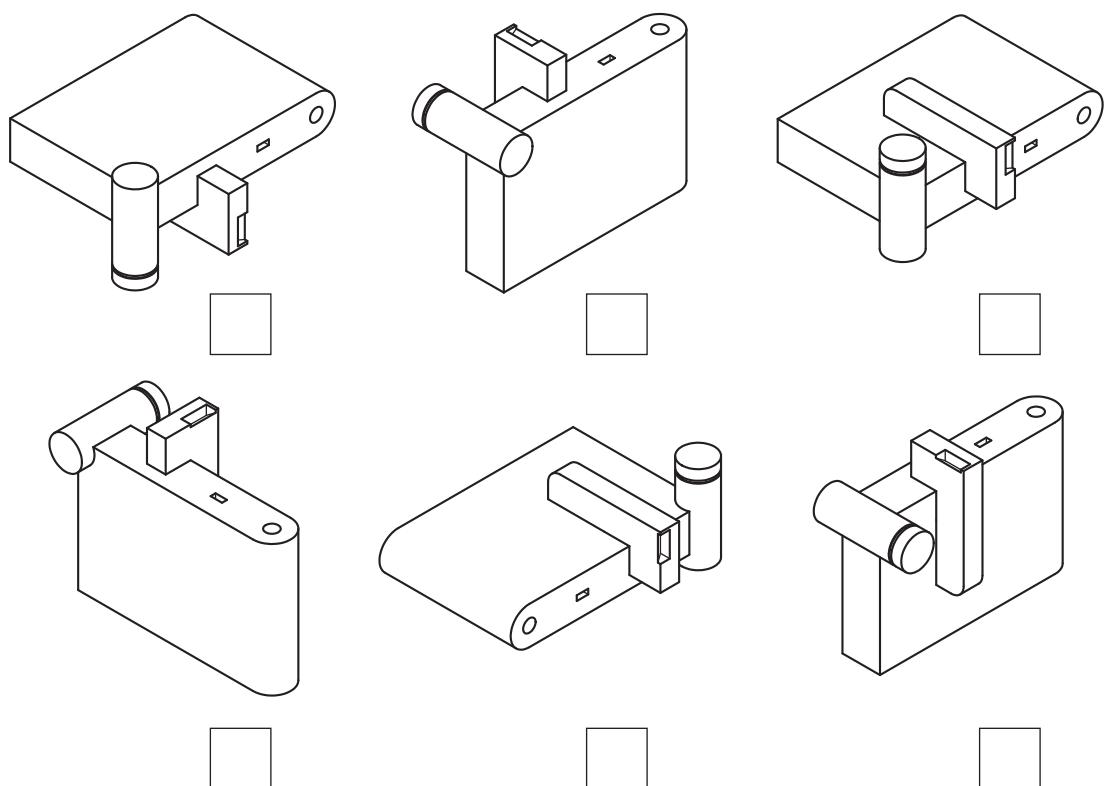
- (c) Identify the correct exploded pictorial drawing by ticking (✓) a box below.

1



- (d) Identify the **two** correct pictorial drawings by ticking (✓) two boxes below.

2



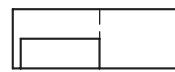
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5. (continued)

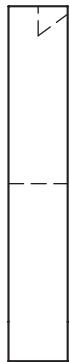
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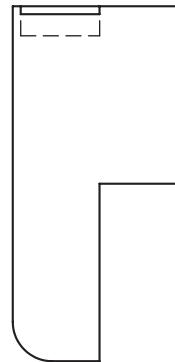
Orthographic views of the tape cutter are shown below.



Plan



End Elevation



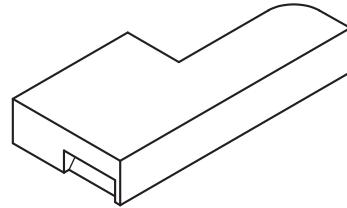
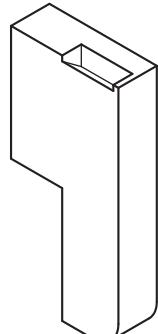
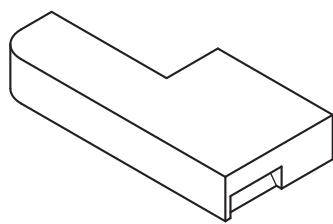
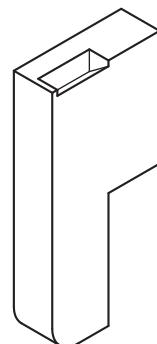
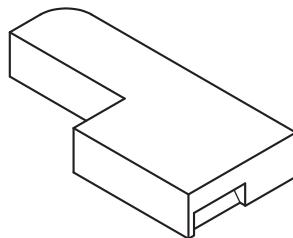
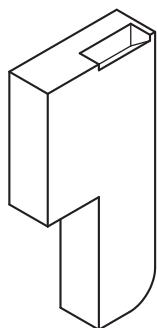
Elevation



End Elevation

- (e) Identify the two correct pictorial drawings by ticking (✓) two boxes below.

2



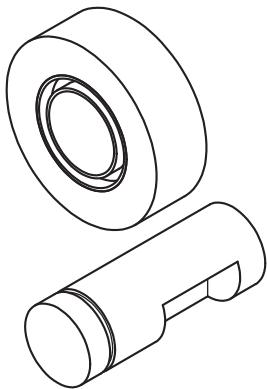
* X 8 3 5 7 5 0 1 2 6 *

5. (continued)

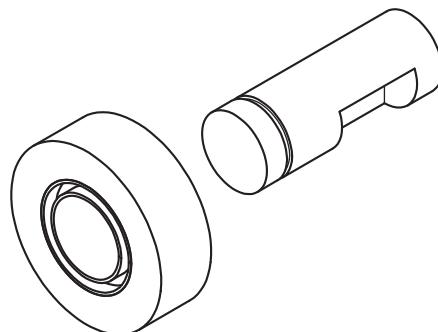
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- (f) Two exploded views for the tape assembly instructions are shown.



view A



view B

Explain why view B is more useful to users than view A.

1

[END OF QUESTION PAPER]



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ADDITIONAL SPACE FOR ANSWERS



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ADDITIONAL SPACE FOR ANSWERS



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