

FOR OFFICIAL USE



National Qualifications  
2021 ASSESSMENT RESOURCE

Mark

**X835/77/01**

**Graphic Communication**

Duration — 2 hours



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

Month

Year

Scottish candidate number

**Total marks — 80**

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.


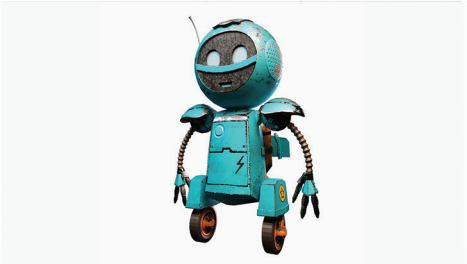




Total marks — 80  
Attempt ALL questions

1. A designer, who specialises in creating 3D computer modelling characters for the games industry, uses an online stock sharing library.

\$3 \$500

FORMATS Any POLY COUNT Any LICENSES Any RATING Any OTHERS  PBR  Animated  Rigged

	
Toy \$30	Robot \$30
	
Man \$34.99	Hybrid \$15

- (a) Describe two advantages and two disadvantages to a game designer of using an online stock sharing library.

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## 1. (continued)

(b) Explain why, when creating 3D characters for games, a designer may use the following techniques.

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- Bump mapping
- Polygons
- Morphing (freeform modelling)

Bump mapping \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Polygons \_\_\_\_\_

\_\_\_\_\_

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Morphing (freeform modelling) \_\_\_\_\_

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

## 1. (continued)

The characters will be placed in an outdoor scene. The scene must focus on the characters and must communicate as much realism to the intended audience as possible.

(c) Describe how each of the following techniques could be used to enhance the scene.

3

- Directional lighting
- Volumetrics
- Depth of field

Directional lighting \_\_\_\_\_

\_\_\_\_\_

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Volumetrics \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Depth of field \_\_\_\_\_

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\_\_\_\_\_



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

2. The Flask-hot Beverages company have a website for the general public to access their service.



- (a) Explain, giving two reasons, why the following areas must be considered when planning the design of the website.

6

- Variety of screen sizes/orientations
- File types
- Typeface

Variety of screen sizes/orientations \_\_\_\_\_

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File types \_\_\_\_\_

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

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2. (a) (continued)

Typeface \_\_\_\_\_

\_\_\_\_\_

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2. (continued)

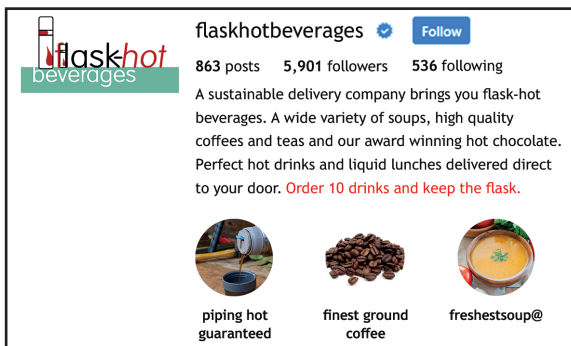
The company deliver their products to local businesses. The company worked with a graphic design team to produce a range of printed and digital media, shown below.



logo and slogan from the website



biodegradable delivery bag



social media account



printed advertising campaign poster

(b) Describe, making reference to at least two graphics shown above, the challenges of creating brand consistency across a range of media.

You should refer to colour space and dots per inch (dpi) in your answer.

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2. (continued)

The graphic design team created the logo as an AI file but saved the logo in various other file formats.



Company colours				
	C18	M100	Y100	K9
	C60	M11	Y46	K0
	C92	M80	Y62	K98

- (c) (i) Explain, giving two reasons, why the graphic artist created the logo as an AI file.

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- (ii) Explain, giving two reasons, why the AI file was converted into a PNG file for use online.

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The graphic artist was also asked to make the logo available as a DXF file.

- (d) State a use for the DXF logo file.

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2. (continued)

A graphic design team has been asked to produce a pull up display for a promotional event.



The team are preparing to send the DTP file to the printing company producing the pull up display. The display will feature the following graphics.



logo



van graphic



flask graphic

photograph



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

## 2. (continued)

(e) Explain why specifying the following information is important when sending the DTP file to a printing company.

- Converting text to vector
- Image resolution
- Pantone colours

You should make reference to a minimum of three of the graphics in your response.

3

Converting text to vector \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Image resolution \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Pantone colours \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

2. (continued)

A section of the specification for the pull up display is shown below.

Specification	
Size	2200 × 880 visible area
Material	White biodegradable vinyl
Finish	Non-reflective, quick wash finish
	Main headline to be embossed
	Fold over double stitched perimeter



edge detail

- (f) Explain, with reference to the specification, why wide format printing is the most suitable method for printing the pull up display.

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Biodegradable vinyl is a new material for the print company. A test print of the pull up display was produced on the new substrate using the specified inks and finish.

- (g) Describe two quality checks that could be made on the test print to ensure the display is ready for commercial printing.

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3. A 3D CAD model of a pepper grinder has been produced. Technical graphics of the pepper grinder are shown on supplementary sheets 1 to 3.



Refer to **supplementary sheet 1** for use with question 3 (a).

- (a) Describe the 3D CAD modelling techniques used to create the **bottle** of the grinder.

Refer to the dimensions in your answer.

You may use sketches to support your answer.

7



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

3. (a) (continued)



## 3. (continued)

Refer to **supplementary sheet 2** for use with question 3 (b).

- (b) Describe the 3D CAD modelling techniques used to create the **cap** of the grinder.

Refer to the dimensions in your answer.

The position of the centre of the R30 arc is not required.

You may use sketches to support your answer.

8



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

3. (b) (continued)



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## 3. (continued)

The assembled model was produced using a combination of bottom up and top down modelling.

Refer to **supplementary sheet 3** for use with question 3 (c).

- (c) Describe three ways where top down modelling would assist the CAD technician in creating the parts of the grinder.

You should refer to specific parts and their features in your response.

Dimensions are not required.

You may use sketches to support your answer.

3



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

3. (continued)

Refer to supplementary sheets 2 and 3 for use with question 3 (d).

A tolerance has been applied to the groove on the CAP of the grinder.

- (d) Explain two reasons why a specific functional tolerance has been applied to the groove.

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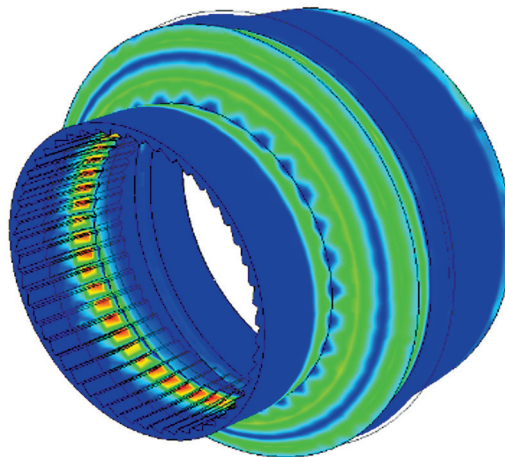
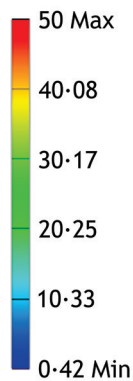
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An FEA test was carried out on the **teeth** of the rotating cutter.

Type: Stress  
Unit MPa  
06/04/2019, 13:54:28



- (e) Describe two factors, other than changing the size or shape of the cutter, or the size of the applied force, that would change the results of the FEA test shown above.

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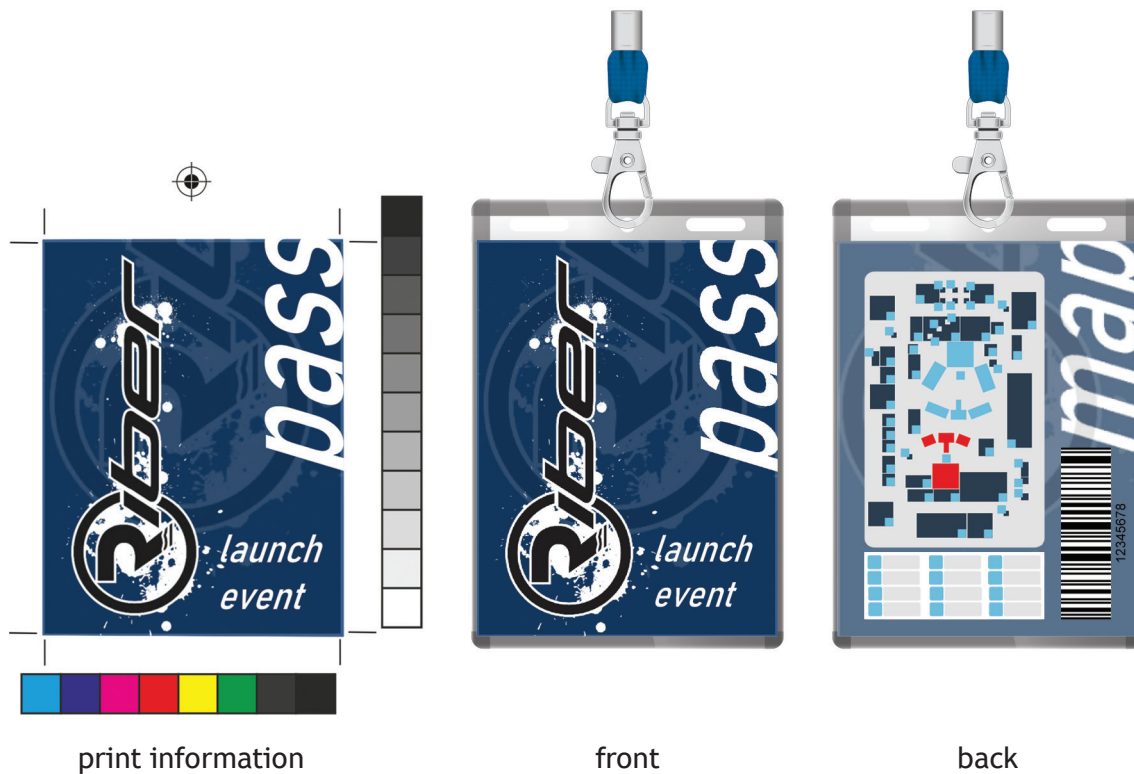


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4. (continued)

Riber have organised a product launch event. The lanyards for the event contain a pass and a scannable barcode. They are printed double-sided on 120 gsm paper. The completed lanyard is shown below alongside some information sent to the print technician.



(b) Explain why the following information is important for the successful printing and function of the pass.

- Duplexing
- Paper opacity
- Bleed
- Registration marks

You should refer to specific features on the lanyard in your response.

4

Duplexing \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Paper opacity \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



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4. (b) (continued)

Bleed \_\_\_\_\_

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Registration marks \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

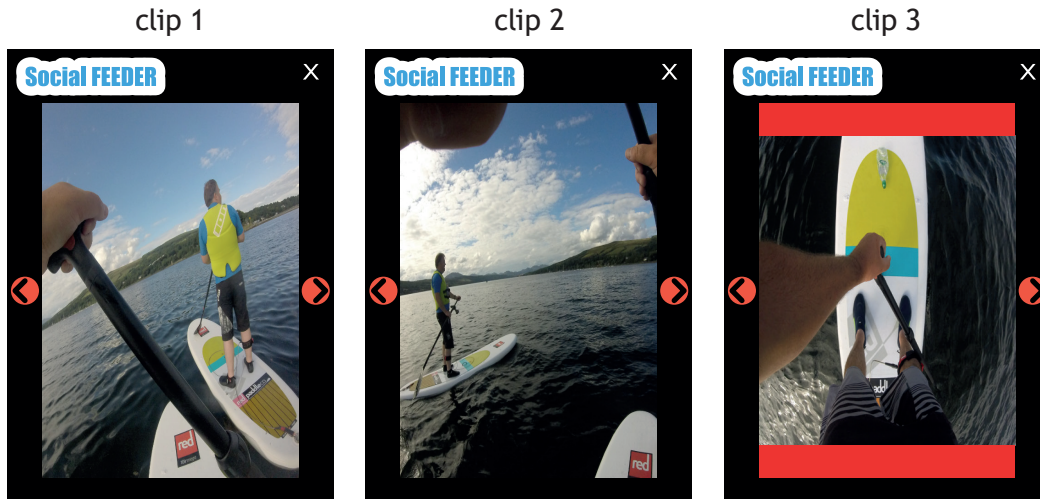
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\* X 8 3 5 7 7 0 1 2 3 \*

4. (continued)

Several video clips were taken of the Riber equipment in use. They are saved in a 3GP file format. Stills of the video clips are shown below.



A 30 second video, which combines the clips, will be uploaded to their social media site.

- (c) Explain, giving two reasons, why an MPEG file format is suitable for the video.

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## 4. (continued)

The video editor combined all three clips into one video. The following post-editing techniques were used.

- Zoom
- Transition
- Overlays

(d) Describe, with reference to the clips shown, how these techniques could be used to enhance the video.

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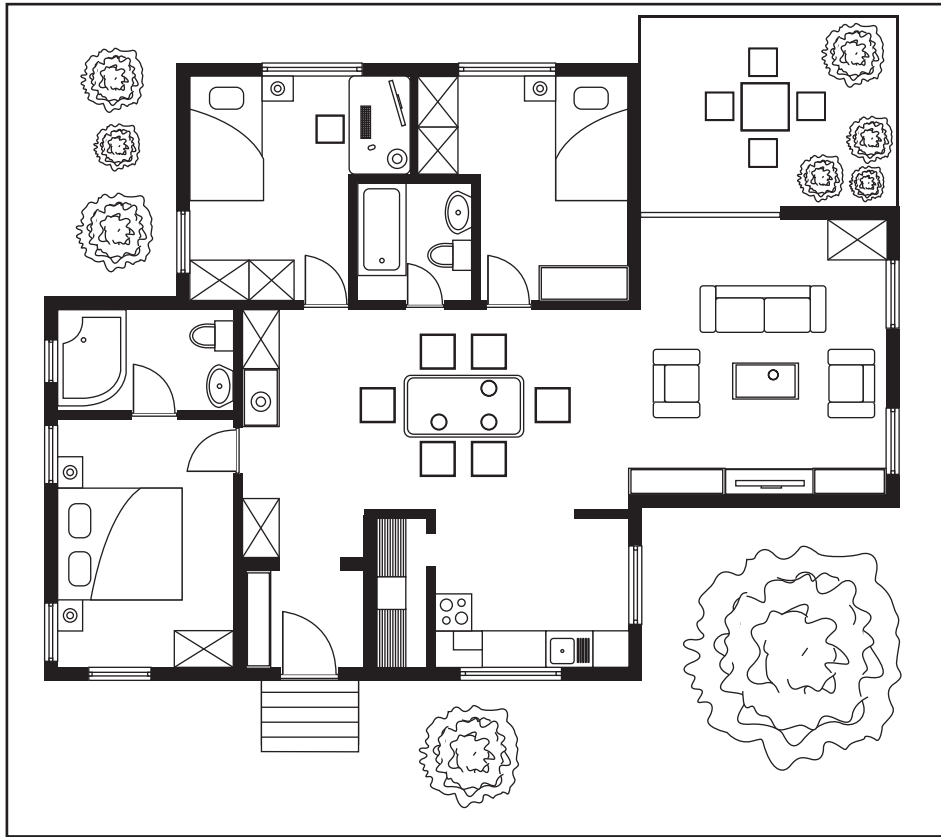
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\* X 8 3 5 7 7 0 1 2 5 \*

5. A building company has produced a range of graphic communications to be used by industry professionals and prospective purchasers.



scale 0 2 4 meters

not drawn to British Standards

- (a) (i) Describe two ways that an interior designer and one way a prospective purchaser would use the graphic shown above. You must give a different use for each response.

3

Interior designer \_\_\_\_\_

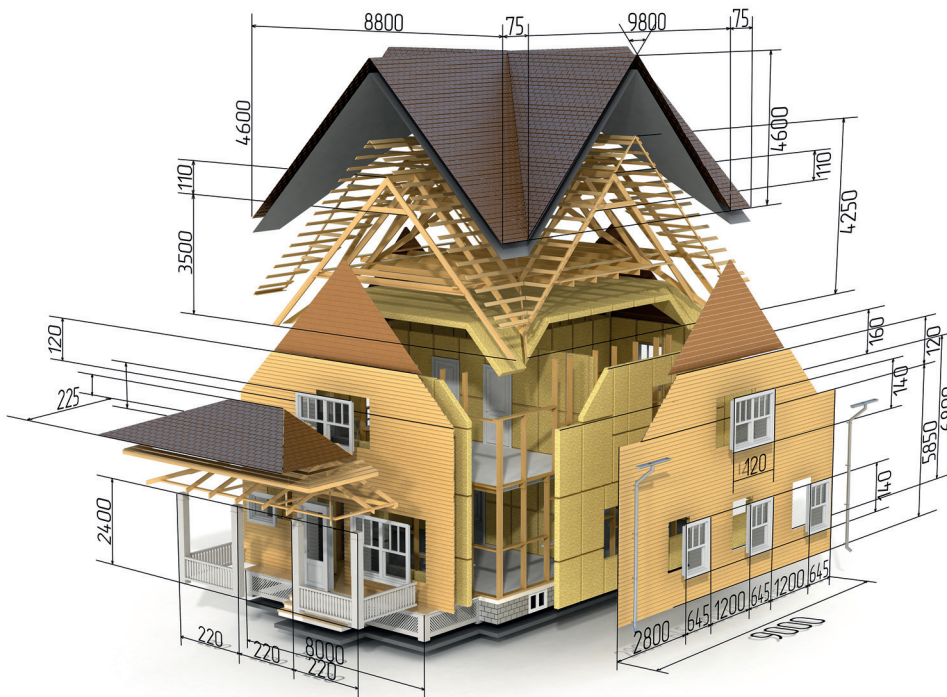
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Prospective purchaser \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_



5. (a) (continued)



panel colours



brick colours



tile colours



(ii) Describe two ways a quantity surveyor and one way a prospective purchaser would use the graphic shown above.

You must give a different use for each response.

3

Quantity surveyor \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prospective purchaser \_\_\_\_\_

\_\_\_\_\_

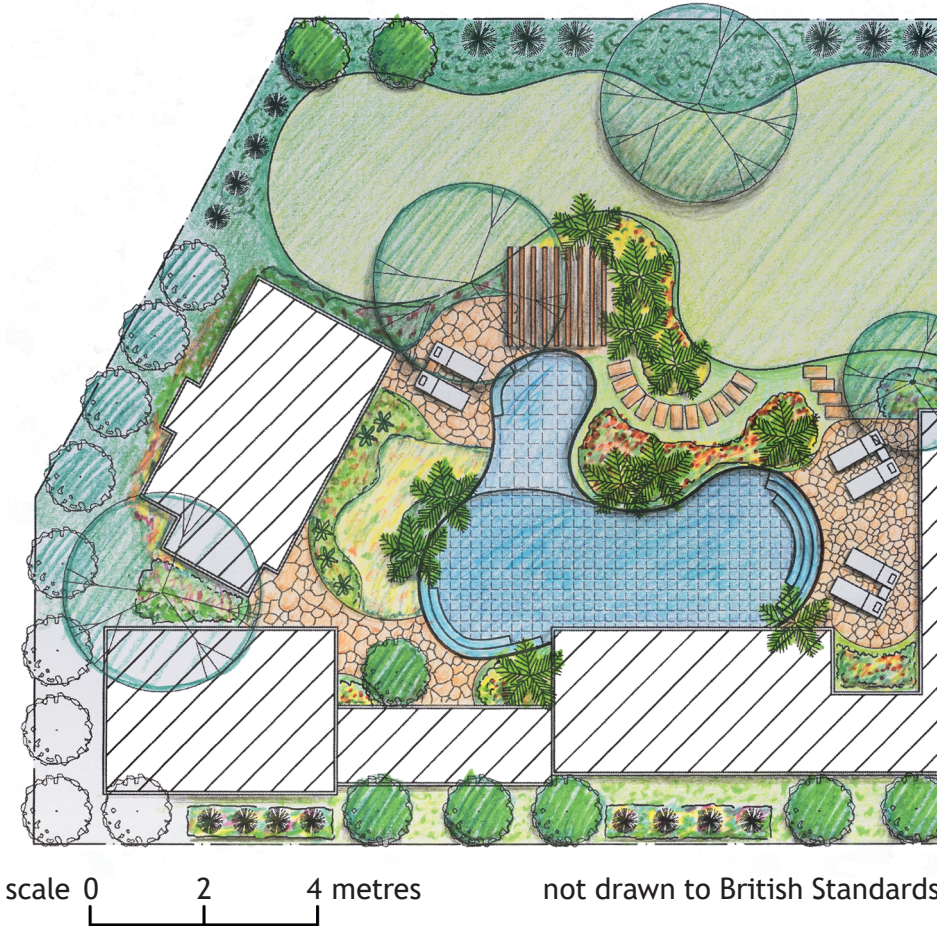
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5. (a) (continued)



(iii) Describe two ways a landscape architect and one way a prospective purchaser would use the graphic shown above.

You must give a different use for each response.

3

Landscape architect \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prospective purchaser \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



5. (a) (continued)



scale 1:1250



proposed housing

(iv) Describe two ways a town planner and one way a prospective purchaser would use the graphic shown above.

You must give a different use for each response.

3

Town planner \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prospective purchaser \_\_\_\_\_

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