



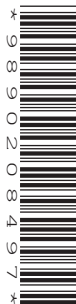
Oxford Cambridge and RSA

**Wednesday 12 June 2024 – Morning**

**A Level in Design and Technology:  
Fashion and Textiles**

**H405/02 Problem Solving in Fashion and Textiles**

**Time allowed: 1 hour 45 minutes**



**You must have:**

- the Resource Booklet

**You can use:**

- a ruler (cm/mm)
- a scientific calculator
- geometrical instruments



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

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### INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- Answer **all** the questions.
- Use the Resource Booklet to answer all the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for a correct method, even if your answer is wrong.
- Each question tells you which part of the Resource Booklet to use.

### INFORMATION

- The total mark for this paper is **70**.
- The marks for each question are shown in brackets [ ].
- Quality of extended response will be assessed in questions marked with an asterisk (\*).
- This document has **16** pages.

### ADVICE

- Read each question carefully before you start your answer.

Read the **Resource Booklet** before you answer the questions.

- 1 Together Community Group (TCG) members have decided to visit charity shops to find resources to work with.

Critically evaluate the impact on the environment of recycling the old knitwear sourced from charity shops.

In your answer you **must** consider the:

- ecological footprint of materials
- social footprint of materials
- effects of using natural sources of energy and raw materials.

Use examples of yarns from **page 2** of the Resource Booklet and from your own studies. **[12]**

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- 2 TCG has decided on a new toy it wants to make. The new product, Billy Bear, will be made from crocheted/knitted panels and/or recycled fabrics and will appeal to young children.

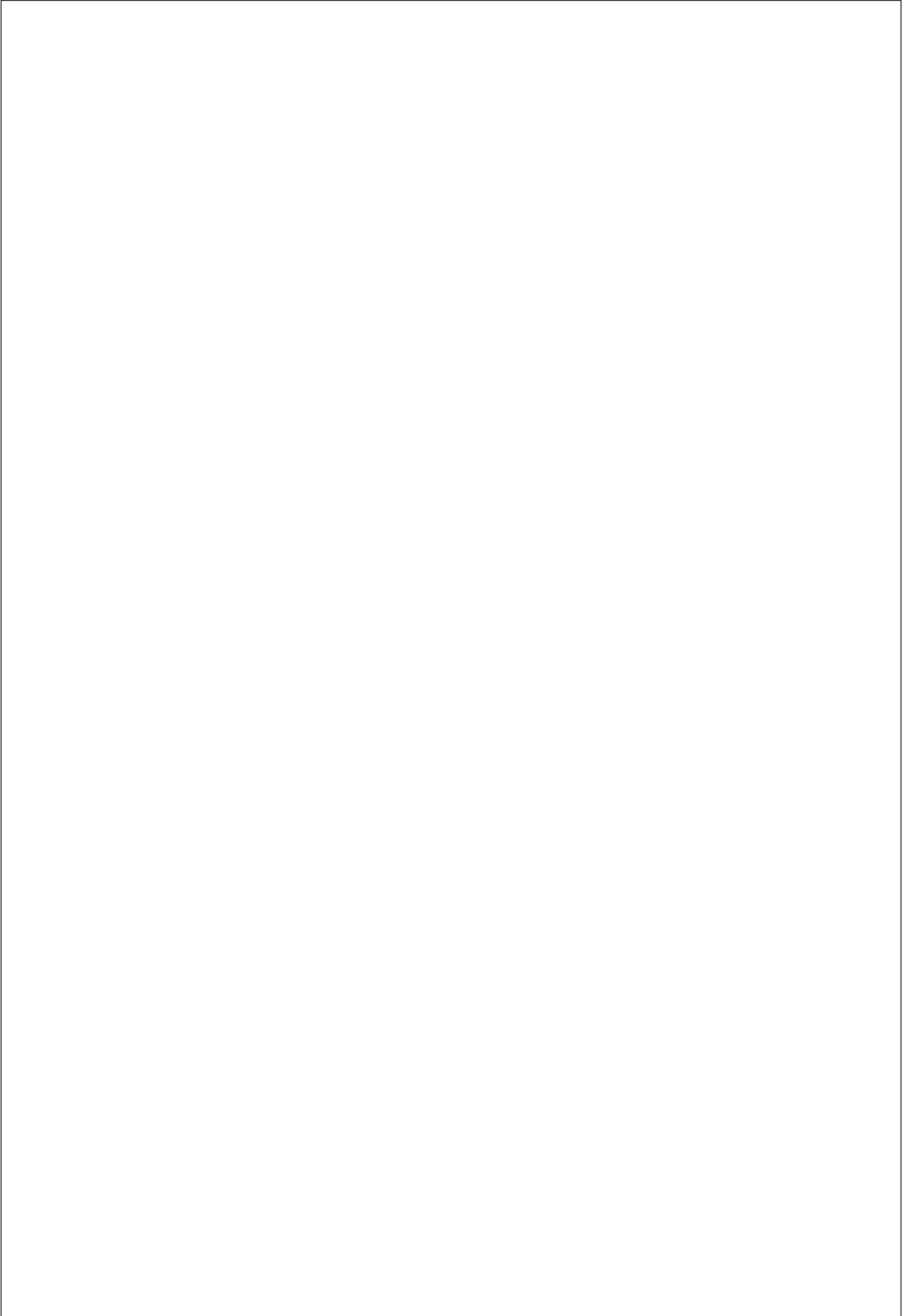
Use sketches and/or notes to show how Billy Bear would be constructed.

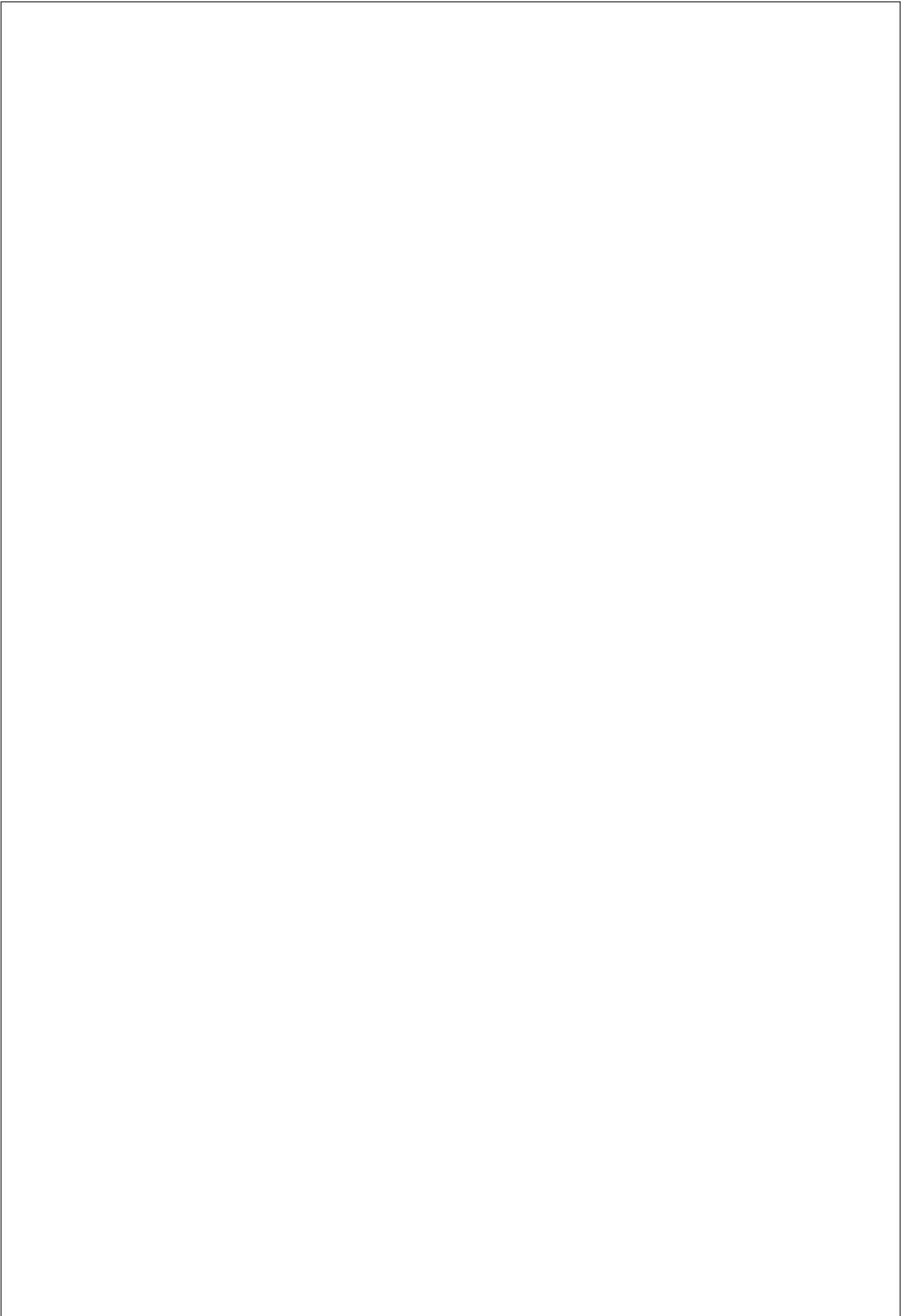
In your answer you **must** consider:

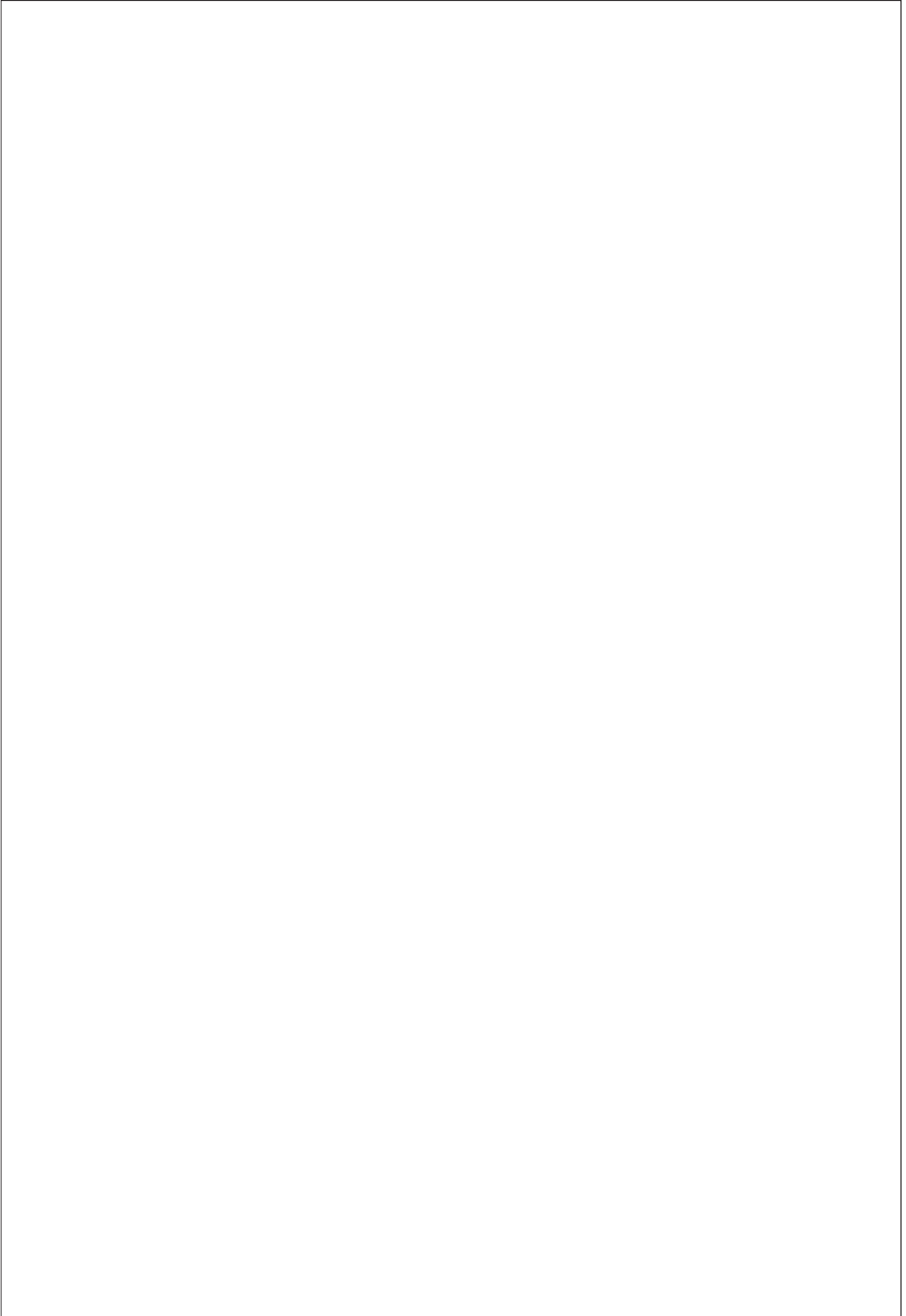
- the pattern pieces that would be used
- tools and machinery that would be used to construct the 3D shape
- any information you would include on the care label in addition to that shown in the Resource Booklet.

Refer to information on **pages 3 and 4** of the Resource Booklet.

**[16]**







- 3\*** Ann is talking to her group at a TCG meeting about the hospital request. She wants to cover some of the challenges that would be involved in producing 100 Billy Bears.

Critically examine how TCG could meet the hospital's request.

In your answer you **must** consider:

- how the use of standard components would change if the design was adapted to be suitable from birth
- how product testing or quality control would be used
- how relevant safety standards would be met and maintained throughout the production process.

Refer to information on **pages 4 and 5** of the Resource Booklet and your own studies.

**[12]**

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4

- (a) TCG is preparing to make the square based pyramid shapes.

One group member will make the pyramids with two colours on each side.

In order to create a template for the sides, length MX as shown on **page 6** of the Resource Booklet is calculated as 7.42 cm correct to **2** decimal places.

Use Pythagoras' theorem and the information in the Resource Booklet to determine by calculation that this is correct. Show your working.

Refer to information on **page 6** of the Resource Booklet.

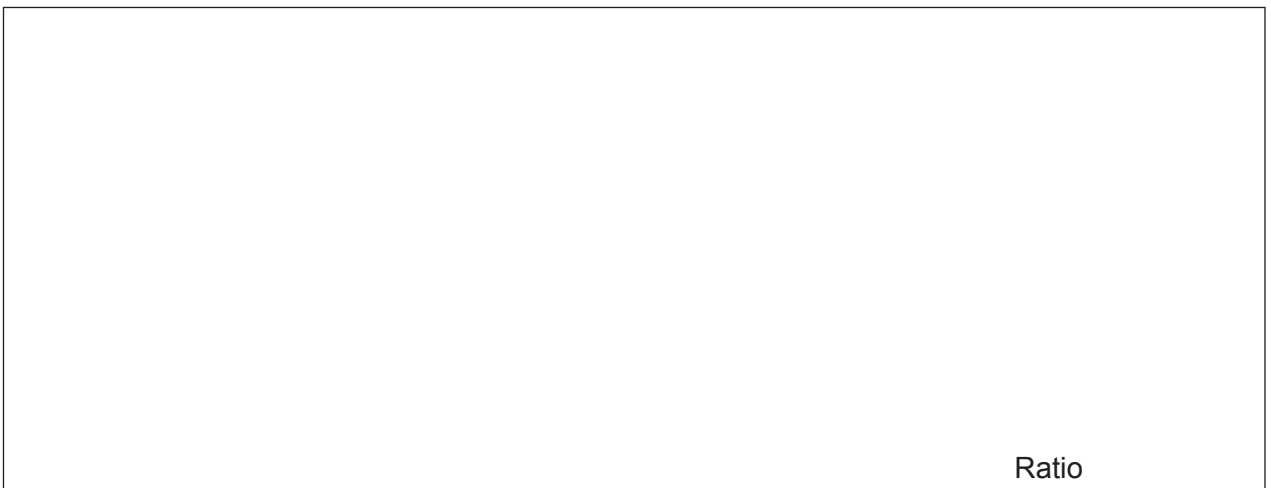
**[4]**

- (b) Group members are also thinking about making some pyramids with dimensions twice the size of the original pyramids.

Using the volumes provided in the Resource Booklet, calculate the ratio of the volume of the small square based pyramid to the volume of the large square based pyramid.

Give your answer in the form  $1:n$  and show your working.

Refer to information on **page 6** of the Resource Booklet.

**[2]**

Ratio

- 5\*** TCG is redeveloping a design for a floor cushion. The floor cushion must have fire-retardant fabric incorporated within the crocheted exterior.

Compare and contrast the design ideas for the cushion as shown on **page 7** of the Resource Booklet.

In your answer you **must** consider:

- methods of construction and manufacture
- maintenance and aftercare
- economical use of available materials.

Refer to information on **page 7** of the Resource Booklet.

**[12]**

This image shows a full page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general writing. There are no margins, text, or other markings on the page.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

- 6 Ann is looking to develop a product that gives TCG the opportunity to show off other textiles skills.

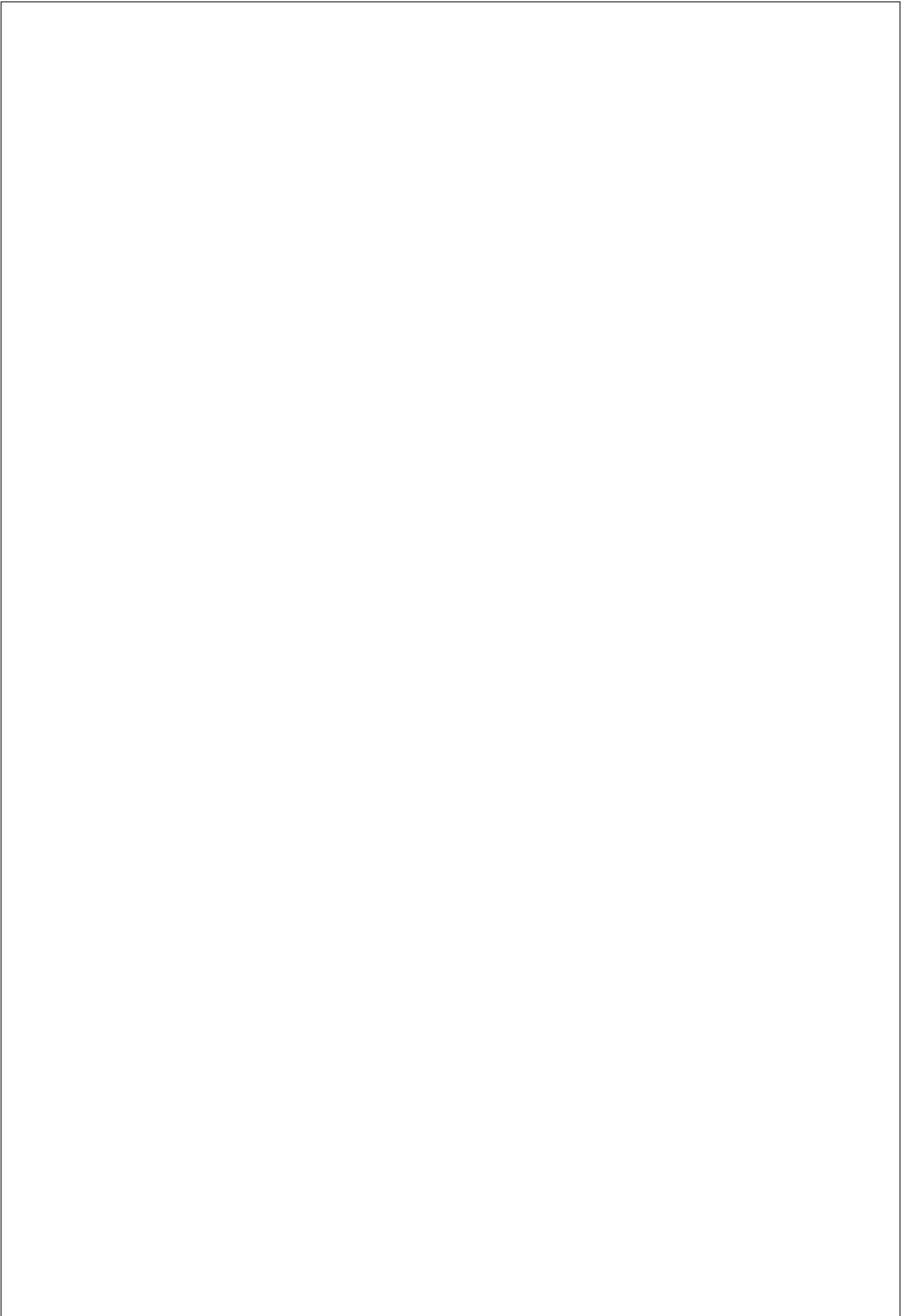
Use sketches and/or notes to show how TCG could add insulation through quilting to enhance the patchwork blanket design that Ann has created as shown on **page 8** of the Resource Booklet.

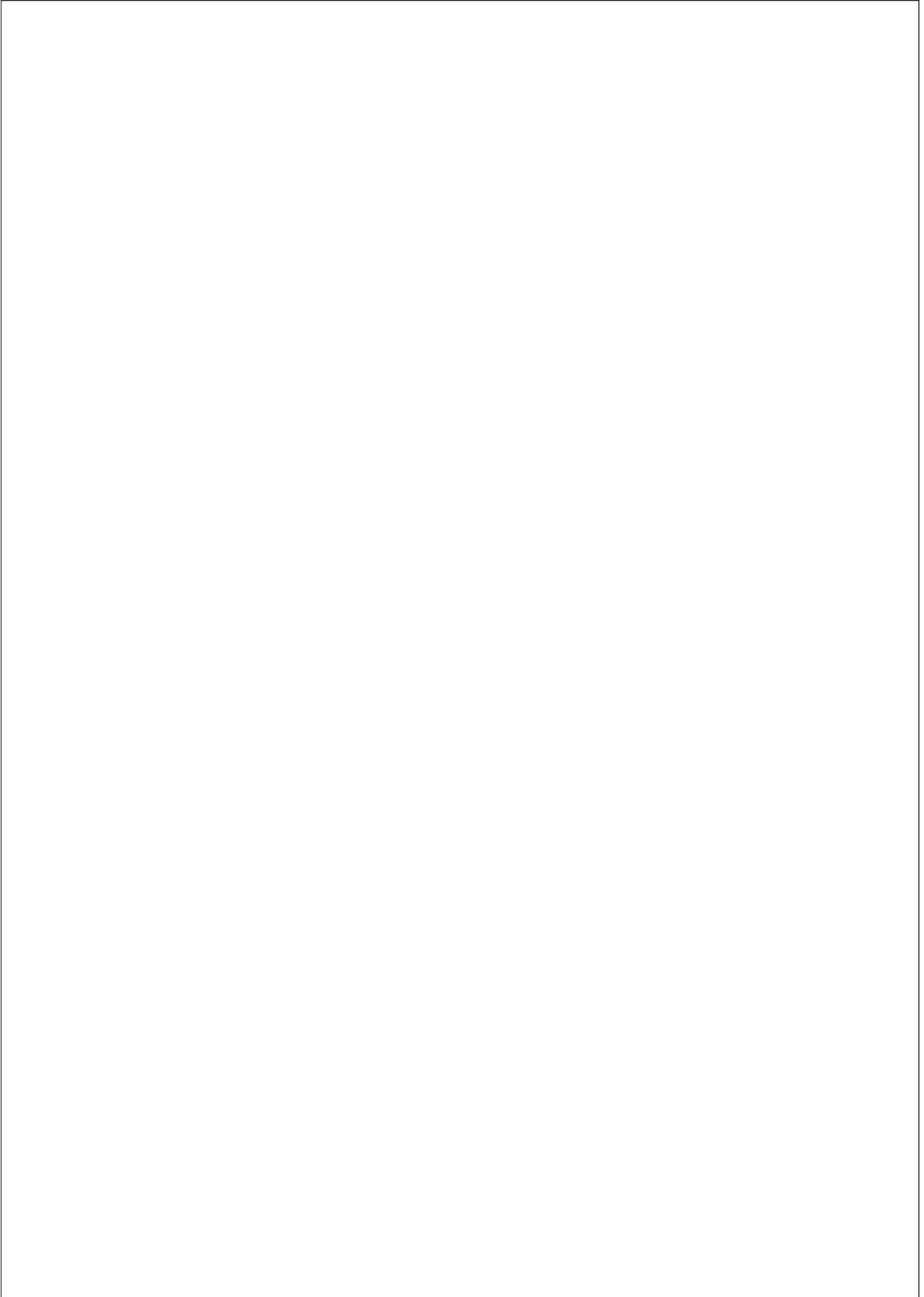
In your answer you **must** consider the use of:

- templates and patterns to ensure accuracy
- equipment to complete this process
- finishing processes.

Refer to information on **page 8** of the Resource Booklet.

**[12]**





**END OF QUESTION PAPER**

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