AQA

A-level

DESIGN AND TECHNOLOGY: FASHION AND TEXTILES

Paper 1   Technical Principles

Wednesday 7 June 2023   Afternoon   Time allowed: 2 hours 30 minutes

Materials
For this paper you must have:
- normal writing and drawing instruments
- a scientific calculator.

Instructions
- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 120.

For Examiner's Use	
Question	Mark
1	
2–3	
4	
5	
6–7	
8	
9	
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11–12	
13–14	
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16	
17	
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19	
20	
21	
TOTAL	

Do not write outside the box

Answer **all** questions in the spaces provided.

0 1 . 1 Describe the **structure** of twill weave fabric.

[3 marks]

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0 1 . 2 Describe the **structure** of weft knitted fabric.

[3 marks]

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6

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| 0 | 2 |

Explain how smart materials can improve the performance of sportswear.

You should include **specific examples** of smart materials in your answer.

[6 marks]

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| 0 | 3 |

Special effect metallic threads can be added to fabrics at different stages of production.

Give **two different** ways metallic threads can be added to fabrics.

[2 marks]

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2 _____

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8

Turn over ▶

| 0 | 4 |

A retailer has different offers on garments as shown in **Table 1**.

Table 1

Garment	Normal price	Sale offer
Budget	£17.99	$\frac{1}{5}$ off
Luxury	£24.50	40% off

Which garment is cheaper in the sale?

You **must** show your working.

[3 marks]

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Answer _____

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0 5 Describe a range of different garment manufacturing systems that meet the demand for fast changes in fashion.

[9 marks]

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Turn over for the next question

Turn over ▶

| 0 | 6 |

Name **two** inorganic fibres.

[2 marks]

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| 0 | 7 |

Outline the role of the British Standards Institute (BSI).

[3 marks]

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0 8 Explain how the **properties of fabrics** can be modified by applying a range of chemical finishes.

In your answer you should refer to specific chemical finishes.

[12 marks]

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12

Turn over ▶

0 9 Manufacturers need to comply with Health and Safety laws.

Analyse and evaluate how the Health and Safety at Work Act (1974) impacts on the **manufacturers** of fashion and textiles products.

[9 marks]

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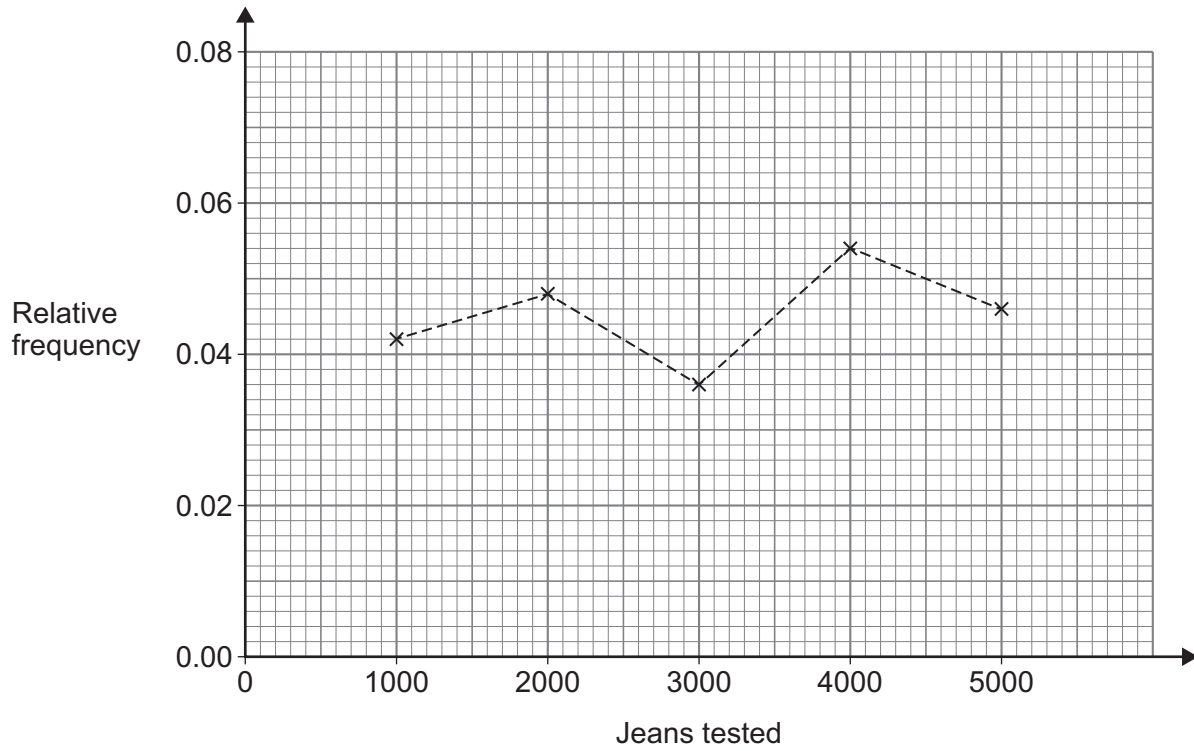
Turn over ▶

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1 0 A jeans manufacturer carries out a survey to investigate the probability of producing faulty jeans.

The relative frequency of faulty jeans was calculated and the results are plotted on the graph in **Figure 1**.

Figure 1

1 0 . 1 How many of the first 3000 jeans tested were faulty?

Show your working.

[2 marks]

_____

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Answer _____

Do not write outside the box

1 0 . **2** Estimate the probability that one pair of jeans, selected at random, will be faulty.

Show your working.

Give a clear reason for your answer.

[2 marks]

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4

Turn over for the next question

Turn over ▶

1 **1** Compare and contrast the environmental impact of wool, silk and hair fibres with synthetic fibres.

In your answer you should refer to:

- the sources of raw material
- processing
- care and maintenance
- disposal.

[12 marks]

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1 **2**   Explain the benefits of virtual modelling for use in client presentations.

[6 marks]

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18

Turn over ▶

| 1 | 3 | Give **two** uses for bindings cut on the bias when making textile products.

[2 marks]

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| 1 | 4 | Give **three** advantages of sub-assembly.

[3 marks]

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5

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| 1 | 5 |

Figure 2 shows a pattern template for a table mat.

Figure 2

Not drawn to scale

46 cm

28 cm
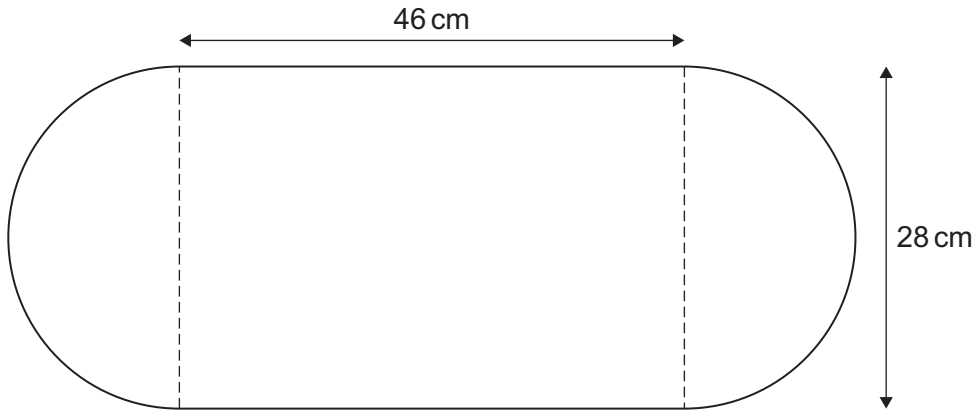
The pattern template is a rectangle with a semi-circle at each end.

Calculate the perimeter of the table mat shape to the nearest cm.

Show your working.

[3 marks]

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Answer _____

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Turn over ▶

1 6 Outline the **qualities** required for a fashion collection to be worn in a warm climate.

In your answer you should refer to specific:

- fibre types
- fabric structures
- fabric properties.

[9 marks]

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| 1 | 7 | Describe **two** different methods of core-spinning yarns.

[4 marks]

Method 1 _____

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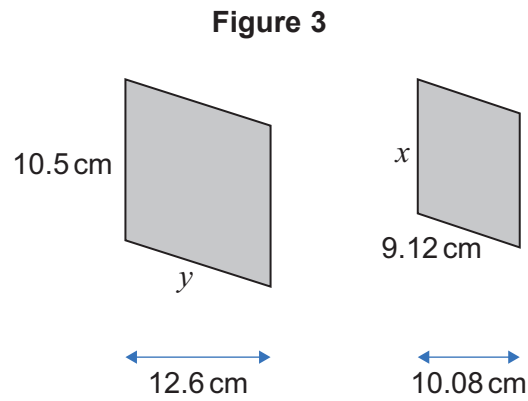
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Method 2 _____

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4

Turn over for the next question

Turn over ▶

1 8   Pattern templates for two different sizes of similar patchwork pieces are shown in **Figure 3**.

Figure 3

10.5 cm

x

9.12 cm

y

12.6 cm   10.08 cm

Calculate lengths x and y.

Show your working.

[3 marks]

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$x =$ _____ cm

$y =$ _____ cm

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| 1 | 9 | . | 1 |

Figure 4

7 cm

9 cm
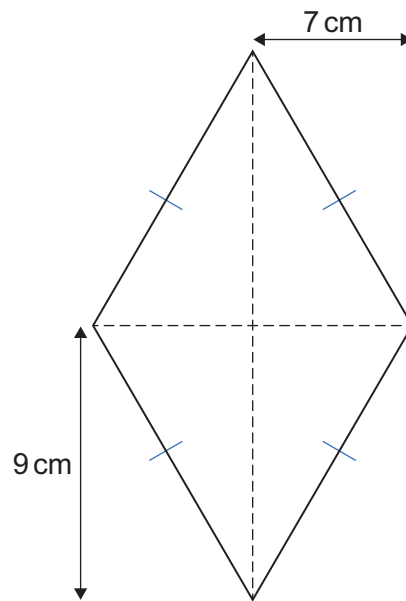
Calculate the area of the diamond-shaped patchwork piece shown in **Figure 4**.
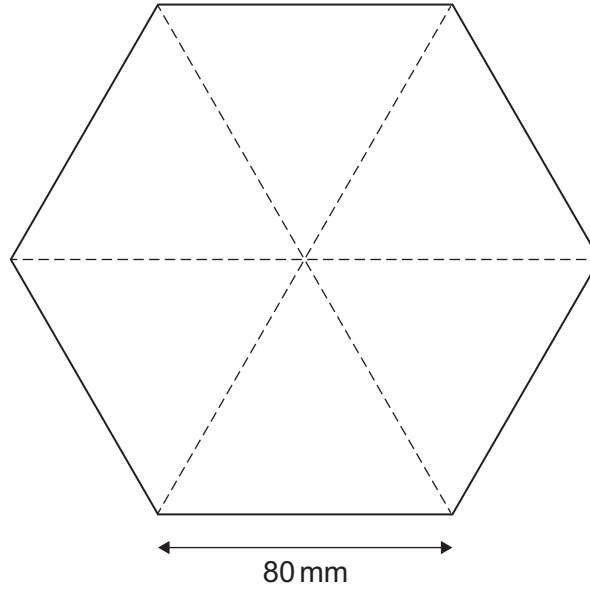
[2 marks]

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Answer _____ cm²

1 9 . 2 The hexagon shown in **Figure 5** is a patchwork piece made up of six identical equilateral triangles.

Figure 5

80 mm

Calculate the area of the hexagon to the **nearest cm²**

[5 marks]

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Answer _____ cm²

7

Turn over ▶

2 0 Analyse and evaluate the economic **and** social impact of offshore production.

In your answer consider the issues for:

- the manufacturer
- the workers.

[9 marks]

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2 **1** Explain why polar fleece is used for fashion and textiles products.

In your answer refer to the structure of the fabric.

[6 marks]

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6

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