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Centre number	Candidate number
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Candidate signature	I declare this is my own work.

A-level DESIGN AND TECHNOLOGY: FASHION AND TEXTILES

Paper 1 Technical Principles

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					
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12					
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17					
18					
19					
TOTAL					



	Ceramic Kevlar® Lycra® Nylon Polyester Polyvinyl PTFE Ramie Silk Tactel® Table 1 Fibre category Fibre Aramid Cellulosic Chlorofibres Fluorofibres Inorganic Protein State three properties of Gore-Tex® that make it suitable for outdoor clothing. [3 mar	Complete Table 1 by inserting the correct fibre from the list below into each fibre category.								
Polyvinyl PTFE Ramie Silk Tactel® Table 1 Fibre category Fibre Aramid Cellulosic Chlorofibres Fluorofibres	Polyvinyl PTFE Ramie Silk Tactel® Table 1 Fibre category Fibre Aramid Cellulosic Chlorofibres Fluorofibres Inorganic Protein State three properties of Gore-Tex® that make it suitable for outdoor clothing. [3 mar.]	Do not use any t	fibre more than o	nce.		[6 mar				
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Fibre category Aramid Cellulosic Chlorofibres Fluorofibres	Fibre category Aramid Cellulosic Chlorofibres Fluorofibres Inorganic Protein State three properties of Gore-Tex® that make it suitable for outdoor clothing. [3 mar	Polyvinyl	PTFE	Ramie	Silk	Tactel [®]				
Aramid Cellulosic Chlorofibres Fluorofibres	Aramid Cellulosic Chlorofibres Fluorofibres Inorganic Protein State three properties of Gore-Tex® that make it suitable for outdoor clothing. [3 mar			Table 1						
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	Inorganic Protein State three properties of Gore-Tex [®] that make it suitable for outdoor clothing. [3 mar	Chlorofibres								
Inorganic	Protein State three properties of Gore-Tex [®] that make it suitable for outdoor clothing. [3 mar	Fluorofibres								
	State three properties of Gore-Tex [®] that make it suitable for outdoor clothing. [3 mar	Inorganic								
Protein	[3 mar	Protein								
1										
2										



3.1	Describe the appearance and characteristics of crêpe fabric.	[3 marks]
3 . 2	Describe the appearance and characteristics of gingham fabric.	[3 marks]
3.3	Describe the appearance and characteristics of taffeta fabric.	[3 marks]



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0 4	Explain the importance of trademarks and logos to a designer.	[6 marks]



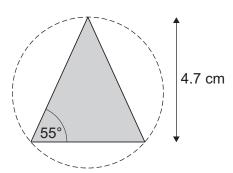
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0 5

Figure 1

Logo for Sportswear



0	5		1	Calculate the	amount of thread	required to stitch	around the circle i	n Figure 1 .
---	---	--	---	---------------	------------------	--------------------	---------------------	---------------------

The radius of the circle is 3.5 cm.

Give your answer to the nearest cm.

Show your working.

		[Z IIIdiks]

Answer _____ cm

1	П	Ш	П	Ш	П
ı	Ш	Ш	Ш	Ш	Ш
ı	Ш	Ш	Ш	Ш	Ш
ı	Ш	Ш	Ш	Ш	Ш
		•	`	_	

0 5 . 2	The shaded area of the logo in Figure 1 is an isosceles triangle.	outs.
	Calculate the area of the triangle.	
	Show your working. [4 marks]	
	Answer cm ²	-

Turn over for the next question



	Explain the benefits of electronic point of sales (EPOS) for fashion manufand retailers.		
	and rotaliors.	[6 marks	
-			
_			
-			
_			
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-			
_			



0	7
•	

Figure 2

Fibre content label for a knitted jumper

58% Wool 30% Nylon 10% Metal 2% Elastane

Explain how the fibre content in Figure 2 enhances the properties of the knitted jumper. [9 marks]

9



0 8 . 1

Table 2 shows production in tonnes for five fibre producing countries.

Complete Table 2.

[1 mark]

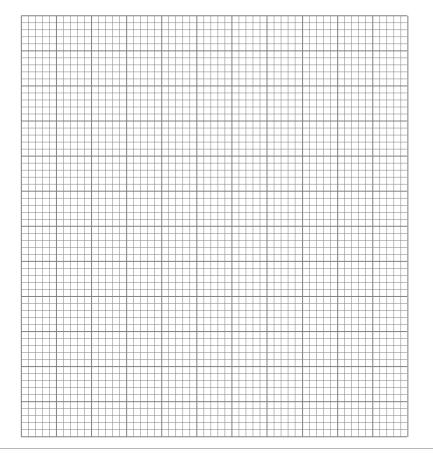
Table 2

	Cotton	Nylon	Polyester	Viscose	Wool	Mean
Brazil	6 500	8 600	9 545	12 600	975	7 644
China	12 250	25 000	46 300	18 400	14 650	23 320
India	14 500	15 500	9 800	16 250	850	11 380
Portugal	7 000	3 575	2 345	850	3 450	3 444
USA	10 250	34 675	39 500	11 950	6 425	

0 8 • **2** Draw a suitable diagram to represent the data for the **mean** fibre production of the five countries shown in **Table 2** in Question **08.1**.

Use the graph paper below.

[3 marks]



4



 children's fancy dress clothing.	
	[6 marks]
Turn over for the next question	



1 0	Analyse and evaluate the environmental sustainability of $Lyocell^{\texttt{@}}$ fibre.	
	In your answer you should refer to:	
	the source of raw material	
	fibre manufacturing	
	transportation.	[12 marks]
		[12 marks]



	·	·	f fashion products [6 ma i
Turn over t	for the next que	stion	
	·		



1 2	Outline the qualities required in work trousers for use on a construction site.
	In your answer you should refer to suitable:
	• fibres
	fabricsfinishes.
	• imisties. [9 marks]



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3	Compare and contrast modern fabric printing methods with fabric printing by hand [9 ma

Turn over ▶

9



ı	A manufacturer prints 2150 metres of fabric. It takes 11 minutes to print each metre	e.
	The design is changed for a second batch of 1980 metres, and each metre takes 9 minutes to print.	
	Calculate the percentage decrease in the time it takes to print the second batch.	
	Show your working. [4 mark	(s]
		_
		_
		_
		_
		_
		_
		_
	Answer	%
5	Give two reasons why piping is used on home furnishings. [2 mark	cs]
	1	_
		_
	2	_
3	State two reasons why a designer might use a prediction company when creating a	3
3	State two reasons why a designer might use a prediction company when creating a new collection. [2 mark	
3	new collection.	
3	new collection. [2 mark	
3	new collection. [2 mark]	



environmental and ethical issues related to fashion.	[9

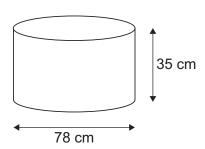


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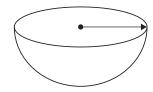
A manufacturer makes 3D shapes for use in a soft play area.

One shape is the cylinder illustrated in Figure 3.

Figure 3



They also make a hemisphere of the **same volume** as the cylinder.



1 8 . 1 Show that the radius of the hemisphere is 43 cm to the nearest cm.

The volume of a hemisphere is found using $V = \frac{2}{3} \pi r^3$

[4 marks]

1 8 . 2	It costs 8 p to fill one hemisphere with child-safe wadding. Work out the cost of 1 m ³ of this wadding to the nearest penny.	box
	Show your working. [2 marks	1
		-
	Answer	6

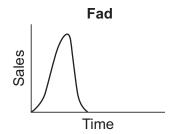
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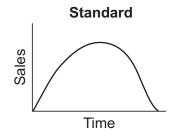


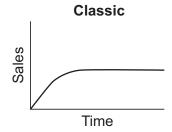
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Figure 4

Sales and marketing cycles





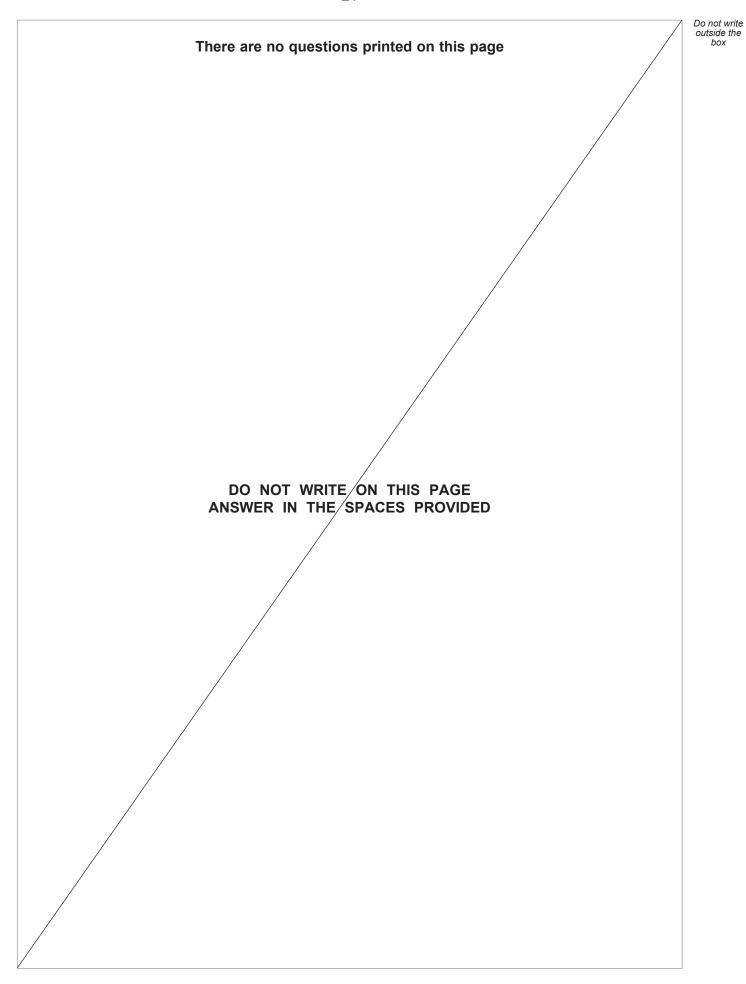


Explain the characteristics of the **three** sales and marketing cycles shown in **Figure 4**. **[6 marks]**

6

END OF QUESTIONS







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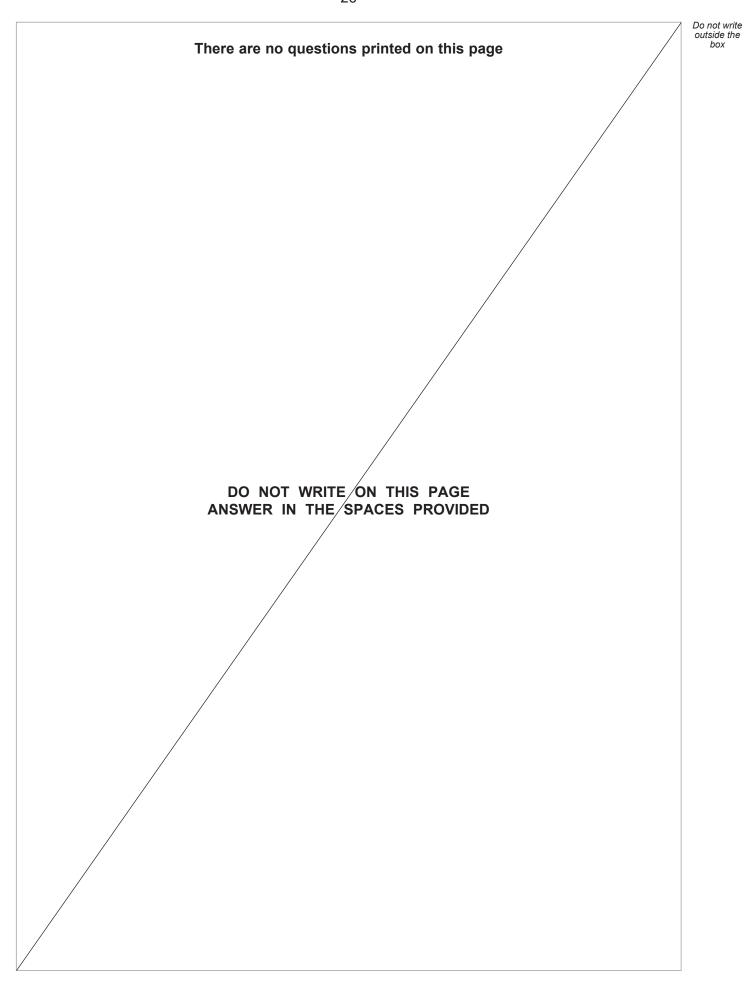


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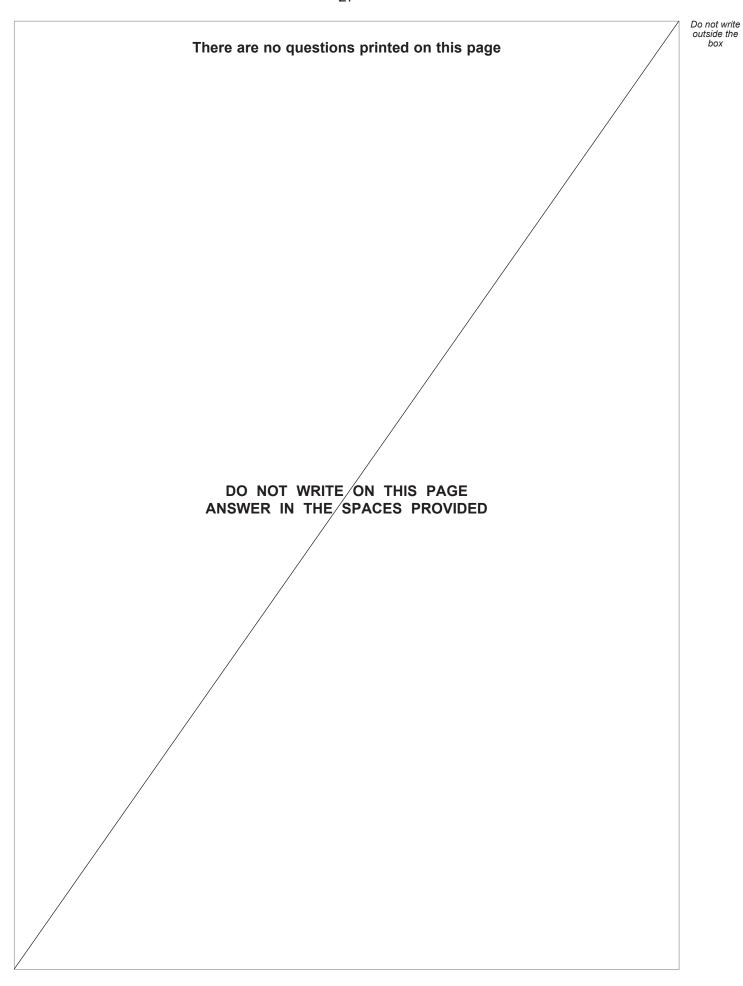


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