

Tuesday 14 June 2022 – Afternoon

A Level Mathematics A

H240/02 Pure Mathematics and Statistics

Printed Answer Booklet

Time allowed: 2 hours

You must have:

- Question Paper H240/02 (inside this document)
- a scientific or graphical calculator



Please write cle	arly in b	olack	ink. I	Do no	ot writ	e in the barcodes.			
Centre number						Candidate number			
First name(s)									
Last name									,

INSTRUCTIONS

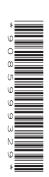
- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided in the Printed Answer Booklet. If you need extra space use the lined pages at the end of the Printed Answer Booklet. The question numbers must be clearly shown.
- · Answer all the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Give non-exact numerical answers correct to **3** significant figures unless a different degree of accuracy is specified in the question.
- The acceleration due to gravity is denoted by $g \, \mathrm{m} \, \mathrm{s}^{-2}$. When a numerical value is needed use g = 9.8 unless a different value is specified in the question.

INFORMATION

- The total mark for this paper is 100.
- The marks for each question are shown in brackets [].
- This document has 20 pages.

ADVICE

Read each question carefully before you start your answer.



Section A: Pure Mathematics

1(a)	
1(b)	

1(c)	
2(a)	
2(b)	
2(0)	

3(a)	
3(b)(i)	
3(b)(ii)	

3(c)	

4	
4	

5(a)	
5(b)	

6(a)		11	1		,
U(u)	Graph	One-one function	Many-one function	A function that is its own inverse	Not a function
	Fig. 1.1				
	Fig. 1.2				
	Fig. 1.3				
	Fig. 1.4				
	Fig. 1.5				
((1-)					
6(b)					

7(a)	
7(b)	

8	

Section B: Statistics

9(a)	
9(b)(i)	
9(b)(ii)	
9(c)	

	D-1	I						A 1
<i>x</i>	Below 20	20 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 60	Abov 60
histogram	0.027	0.147	0.153	0.187	0.193	0.147	0.133	0.01
Sam's model, N(40, 100)	0.023		0.150	0.191			0.136	0.02
Probability obtained from Nina's model, N(m, s ²)	0.030		0.153	0.188			0.130	0.02
	Probability obtained from histogram Probability obtained from Sam's model, N(40, 100) Probability obtained from	Probability obtained from histogram Probability obtained from Sam's model, N(40, 100) Probability obtained from obtained from Probability obtained from obtained from obtained from obtained from one of the probability obtained from	Probability obtained from histogram Probability obtained from Sam's model, N(40, 100) Probability obtained from Probability obtained from Sam's model, N(40, 100)	Probability obtained from histogram Probability obtained from Sam's model, N(40, 100) Probability obtained from Sambability obtained from Sam's model, N(40, 100)	Probability obtained from histogram Probability obtained from Sam's model, N(40, 100) Probability obtained from Sambability obtained from Sam's model, N(40, 100) Probability obtained from Sambability	Probability obtained from Anistogram Probability obtained from Sam's model, N(40, 100) Probability obtained from Sam's model, N(40, 100) Probability obtained from Probability obtained from Sam's model, N(40, 100)	Probability obtained from histogram 0.027 0.147 0.153 0.187 0.193 0.147 Probability obtained from Sam's model, N(40, 100) 0.023 0.150 0.191 0.191 Probability obtained from Sam's model, N(40, 100) 0.023 0.150 0.191 0.191	Probability obtained from histogram 0.027 Probability obtained from Sam's model, N(40, 100) 0.023 Probability obtained from Sam's model, N(40, 100) 0.150 Probability obtained from Sam's model, N(40, 100) 0.023 Probability Sam's model, N(40, 100) <t< td=""></t<>

9(e)(ii)	

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10(a)(i)	
10(a)(ii)	
10(a)(iii)	
10(b)(i)	
400000	
10(b)(ii)	
10()	
10(c)	
10(d)	
10(a)	

10(e)	
11	

12(a)	

12(b)	

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13(a)	

13(b)	

ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

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