

## Tuesday 13 June 2023 – 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 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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Last name

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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 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  $g \text{ m s}^{-2}$ . 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

<b>1(a)(i)</b>	
<b>1(a)(ii)</b>	
<b>1(b)</b>	

<b>2(a)</b>	
<b>2(b)</b>	



**4(a)**


**4(b)**


<b>5(a)(i)</b>	
<b>5(a)(ii)</b>	

<b>5(b)</b>	
<b>5(c)(i)</b>	
<b>5(c)(ii)</b>	

**DO NOT WRITE IN THIS SPACE**





<b>6(b)(i)</b>	

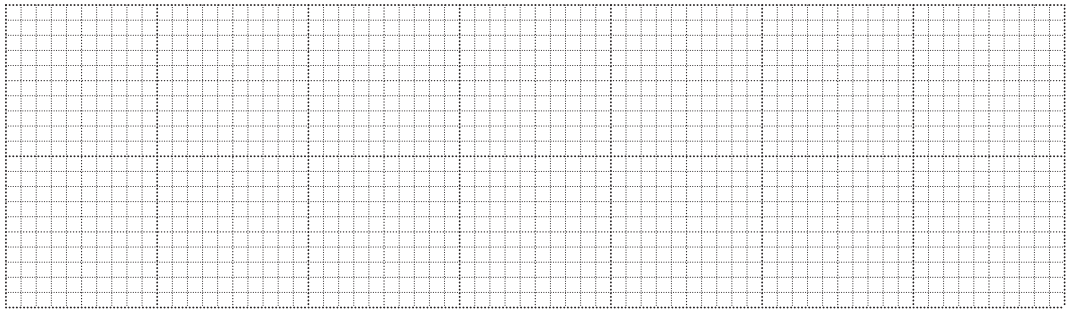
<b>6(b)(ii)</b>	

<b>6(c)</b>	

<b>7(a)</b>	
<b>7(b)</b>	

**Section B: Statistics**

**8(a)**



**8(b)**

A series of 18 horizontal lines providing space for writing the answer to question 8(b).

<b>9(a)</b>	
<b>9(b)(i)</b>	
<b>9(b)(ii)</b>	
<b>9(c)</b>	
<b>9(d)</b>	



<b>11(a)</b>	
<b>11(b)</b>	
<b>11(c)</b>	

<b>12(a)</b>	

<b>12(b)</b>	

**DO NOT WRITE IN THIS SPACE**

<b>13(a)(i)</b>	
<b>13(a)(ii)</b>	
<b>13(b)(i)</b>	
<b>13(b)(ii)</b>	
<b>13(c)(i)</b>	



<b>13(c)(ii)</b>	
<b>13(d)</b>	
<b>14(a)</b>	

14(b)


**DO NOT WRITE IN THIS SPACE**

**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).