



Cambridge International AS & A Level

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MATHEMATICS

9709/25

Paper 2 Pure Mathematics 2

May/June 2025

1 hour 15 minutes

You must answer on the question paper.

You will need: List of formulae (MF19)

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined page at the end of this booklet; the question number or numbers must be clearly shown.
- You should use a calculator where appropriate.
- You must show all necessary working clearly; no marks will be given for unsupported answers from a calculator.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

This document has **16** pages. Any blank pages are indicated.

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1 Show that $\int_2^{11} \frac{8}{4x+1} dx = \ln a$, where a is an integer to be found.

[3]

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- 3** Find the coordinates of the stationary points of the curve with equation $y = \frac{8x}{2x+3} - 6x + 5$. [5]

[illegible]



(c) Hence find the area of the shaded region. Give your answer correct to 2 significant figures. [4]

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(b) Hence factorise $p(x)$.

[3]

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(c) Find the least positive value of θ in radians such that $p(\cot 2\theta) = 0$.

[2]

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[illegible]



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(b) Hence solve the equation

$$12 \cos 2\phi \sin (2\phi + 30^\circ) = 5$$

for $0^\circ < \phi < 90^\circ$.

[5]

This image shows a full page of a handwriting practice worksheet. It consists of approximately 20 horizontal rows. Each row is defined by two parallel dotted lines, creating a series of uniform gaps for letter height. The lines are evenly spaced and extend across the entire width of the page, providing a guide for consistent letter formation. There is no text or other markings on the page.



If you use the following page to complete the answer to any question, the question number must be clearly shown.

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