



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]





[2]

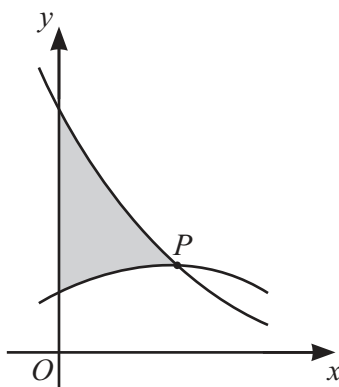
[3]

[illegible]



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

[illegible]



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[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]



11

[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]

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