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School code

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School name

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Given name/s

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Family name

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Attach your
barcode ID label here

Book

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of

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books used

External assessment 2025

Question and response book

Mathematical Methods

Paper 1 — Technology-free

Time allowed

- Perusal time — 5 minutes
- Working time — 90 minutes

General instructions

- Answer all questions in this question and response book.
- Calculators are **not** permitted.
- QCAA formula book provided.
- Planning paper will not be marked.

Section 1 (10 marks)

- 10 multiple choice questions

Section 2 (45 marks)

- 9 short response questions



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THIS PAGE WILL NOT BE MARKED

Section 1

Instructions

- This section has 10 questions and is worth 10 marks.
- Use a 2B pencil to fill in the A, B, C or D answer bubble completely.
- Choose the best answer for Questions 1–10.
- If you change your mind or make a mistake, use an eraser to remove your response and fill in the new answer bubble completely.

	A	B	C	D
Example:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	A	B	C	D
1.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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8.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ensure you have filled an answer bubble for each question.

Do not write outside this box.

Section 2

Instructions

- Write using black or blue pen.
 - Questions worth more than one mark require mathematical reasoning and/or working to be shown to support answers.
 - If you need more space for a response, use the additional pages at the back of this book.
 - On the additional pages, write the question number you are responding to.
 - Cancel any incorrect response by ruling a single diagonal line through your work.
 - Write the page number of your alternative/additional response, i.e. See page ...
 - If you do not do this, your original response will be marked.
 - This section has nine questions and is worth 45 marks.
-

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QUESTION 11 (5 marks)

Determine the following integrals.

a) $\int \frac{1}{x} dx$

[1 mark]

b) $\int e^{4x} dx$

[1 mark]

c) $\int x(x^3 + 8) dx$

[3 marks]

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Do not write outside this box.





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Do not write outside this box.





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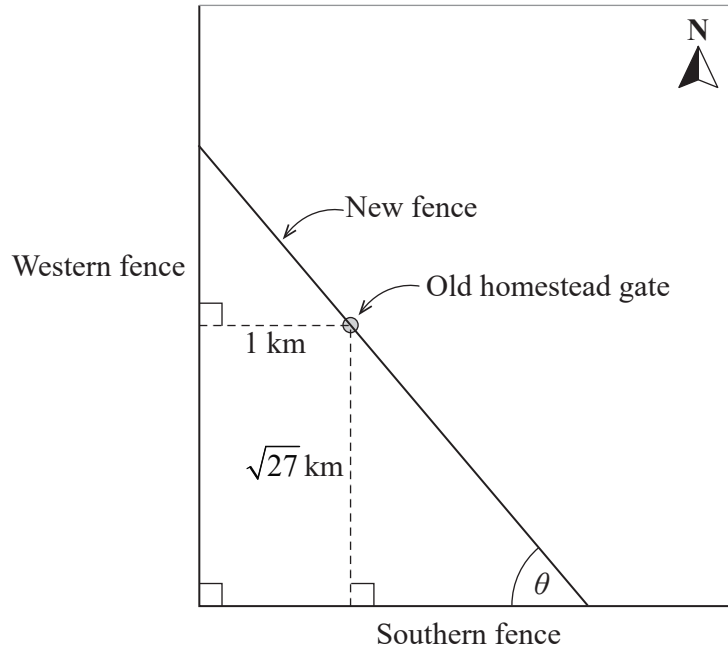


QUESTION 19 (5 marks)

A farmer wishes to construct the shortest possible fence to enclose a triangular area in the corner of a paddock. There are two existing fences, the western fence and the southern fence.

The new fence must pass through the old homestead gate, as shown.

Not to scale



Determine the length of the shortest possible fence.

Verifying that the fence length is a minimum is not required.

Do not write outside this box.



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