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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 2024

Question and response book

General Mathematics

Paper 2

Time allowed

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

General instructions

- Answer all questions in this question and response book.
- Write using black or blue pen.
- QCAA-approved scientific calculator permitted.
- QCAA formula book provided.
- Planning paper will not be marked.

Section 1 (38 marks)

- 7 short response questions



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THIS PAGE WILL NOT BE MARKED

Section 1

Instructions

- 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.
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QUESTION 1 (5 marks)

Each of the 60 performers in a music and dance concert is either a Year 11 or Year 12 student and either a musician or a dancer.

There are four more Year 11 students than Year 12 students. One quarter of the Year 11 students are dancers and half of the Year 12 students are dancers.

Complete the two-way frequency table to calculate the percentage of students who are musicians.

	Year 11	Year 12	Total
Musician			
Dancer			
Total			60

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QUESTION 2 (4 marks)

The table shows the travel time (minutes) between five islands in the Torres Strait for a ferry service.

	Waiben	Palilug	Ngurapai	Keriri	Gealug
Waiben		—	18	—	14
Palilug			—	25	16
Ngurapai				20	28
Keriri					—
Gealug					

Construct a weighted graph and use it to calculate the total travel time for a ferry that completes a Hamiltonian cycle beginning at Waiben.

Note: If you make a mistake in the graph, cancel it by ruling a single diagonal line through your work and use the additional response space at the back of this question and response book.

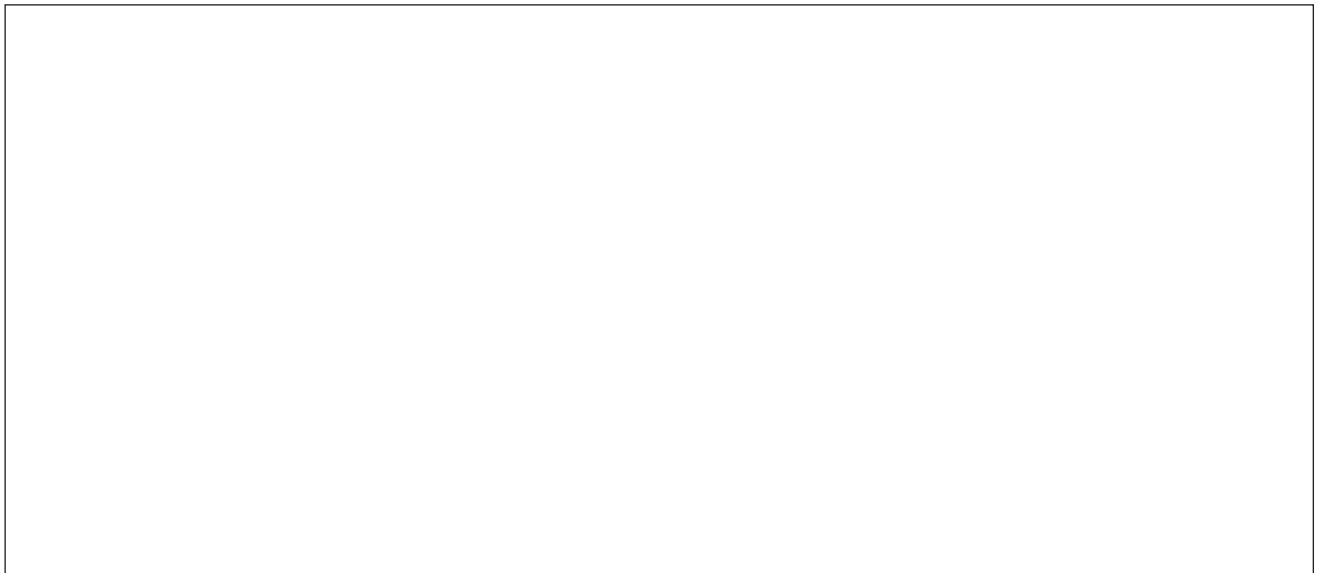
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QUESTION 4 (5 marks)

A person completes the following activities to make a loaf of bread.

Activity	Task	Time (min)	Prerequisite
A	Measure ingredients	3	—
B	Mix ingredients and prepare tin	5	A
C	Leave dough to rise	20	B
D	Pre-heat oven and tin	15	B
E	Knead dough	7	C
F	Bake dough	30	D, E

Use a project network diagram with completed forward and backward scanning to determine the float time for any non-critical activity.



Note: If you make a mistake in the diagram, cancel it by ruling a single diagonal line through your work and use the additional response space at the back of this question and response book.

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QUESTION 5 (6 marks)

A flying doctor coordinator allocates a plane from each of three airbases, A, B and C, to fly to one of three sites, P, Q and R, to provide medical care. Distances (km) are shown in the table.

	P (28° S 136° E)	Q	R (20° S 147° E)
A (20° S 136° E)	x	600	y
B	445	485	340
C	980	1170	770

Determine the optimal allocation for each plane and the minimum total distance flown.

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ADDITIONAL PAGE FOR STUDENT RESPONSES

Write the question number you are responding to.

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