



Midterm Exam Paper

November 2021

Grade	AS
Subject	Pure Mathematics
Paper Name	Paper 3
Duration	1 hour

Student's Information

Name (Pinyin)	English Name	Class	Group

Instructions

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Do **not** use an erasable pen or correction fluid.
- Write your answer to each question in the space provided.
- 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.
- **You are reminded of the need for clear representation in your answers.**

Information:

- The total mark for this paper is 47.
- The number of marks for each question or part question is shown in brackets [].

(ii) Hence, in each of the following cases, find the smallest positive angle θ which satisfies the equation

(a) $\sqrt{6} \cos \theta + \sqrt{10} \sin \theta = -4$, [2]

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(b) $\sqrt{6} \cos \frac{1}{2}\theta + \sqrt{10} \sin \frac{1}{2}\theta = 3$, [4]

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