

Write your name here

Surname

Other names

Pearson Edexcel
Level 3 GCE

Centre Number

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Candidate Number

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Further Mathematics

Advanced Subsidiary
Further Mathematics options
25: Further Mechanics 1
(Part of options C, E, H and J)

Sample Assessment Material for first teaching September 2017

Paper Reference

8FM0-25

You must have:

Mathematical Formulae and Statistical Tables, calculator

Total Marks

--

Candidates may use any calculator allowed by the regulations of the Joint Council for Qualifications. Calculators must not have the facility for symbolic algebra manipulation, differentiation and integration, or have retrievable mathematical formulae stored in them.

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You should show sufficient working to make your methods clear. Answers without working may not gain full credit.
- Answers should be given to three significant figures unless otherwise stated.

Information

- A booklet 'Mathematical Formulae and Statistical Tables' is provided.
- The total mark for this part of the examination is 40. There are 4 questions.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Unless otherwise indicated, whenever a value of g is required, take $g = 9.8 \text{ ms}^{-2}$ and give your answer to either 2 significant figures or 3 significant figures.

Answer ALL questions. Write your answers in the spaces provided.

1. A ball is projected with speed 6 ms^{-1} up a line of greatest slope of an inclined plane.

The plane is inclined to the horizontal at an angle α , where $\sin \alpha = \frac{1}{7}$

The ball is modelled as a particle, the plane is modelled as being smooth and air resistance is modelled as being negligible. Using the conservation of energy principle, find the speed of the ball at the instant when it has travelled a distance of 5 m up the plane.

(5)

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Question 1 continued

Lined area for writing the answer to Question 1 continued.

(Total for Question 1 is 5 marks)

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S 6 0 9 8 0 A 0 3 1 2

Question 3 continued

Lined area for writing answers.

(Total for Question 3 is 11 marks)

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Question 4 continued

Lined writing area for the answer to Question 4.

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Question 4 continued

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