

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel
Level 3 GCE**

Centre Number

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Candidate Number

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Paper
reference

8FM0/26

Further Mathematics

Advanced Subsidiary

Further Mathematics options

**26: Further Mechanics 2
(Part of option J)**

You must have:

Mathematical Formulae and Statistical Tables (Green), calculator

Total Marks

**Candidates may use any calculator allowed by Pearson regulations.
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.
- Unless otherwise indicated, whenever a value of g is required, take $g = 9.8 \text{ m s}^{-2}$ and give your answer to either 2 significant figures or 3 significant figures.

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.
- Good luck with your examination.

Turn over ►

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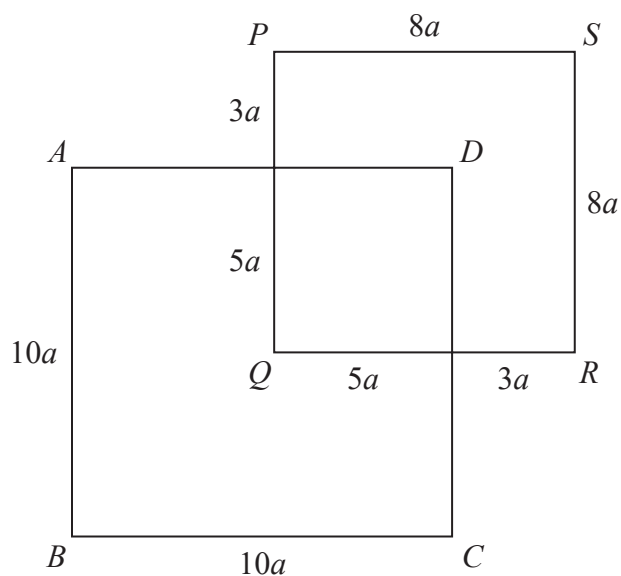


Figure 1

A uniform rod of length $72a$ is cut into pieces. The pieces are used to make two rigid squares, $ABCD$ and $PQRS$, with sides of length $10a$ and $8a$ respectively. The two squares are joined to form the rigid framework shown in Figure 1.

The squares both lie in the same plane with the rod AB parallel to the rod PQ .

Given that

- AD cuts PQ in the ratio $3:5$
- DC cuts QR in the ratio $5:3$

(a) explain why the centre of mass of square $ABCD$ is at Q .

(1)

(b) Find the distance of the centre of mass of the framework from B .

(5)



