

Write your name here

Surname

Other names

**Pearson Edexcel**  
**International**  
**Advanced Level**

Centre Number

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Candidate Number

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# Mechanics M2

## Advanced/Advanced Subsidiary

Friday 17 June 2016 – Afternoon  
**Time: 1 hour 30 minutes**

Paper Reference

**WME02/01**

**You must have:**

Mathematical Formulae and Statistical Tables (Blue)

Total Marks

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**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). Coloured pencils and highlighter pens must not be used.
- **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.
- Whenever a numerical value of  $g$  is required, take  $g = 9.8 \text{ m s}^{-2}$ , and give your answer to either two significant figures or three significant figures.
- When a calculator is used, the answer should be given to an appropriate degree of accuracy.

### Information

- The total mark for this paper is 75.
- 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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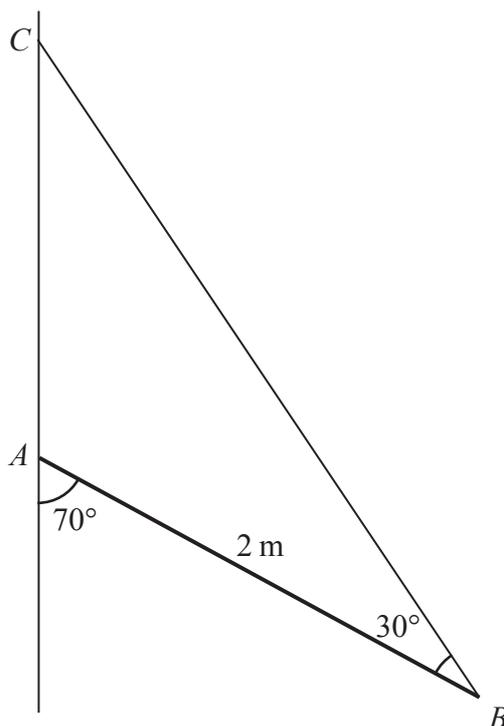


Figure 3

A uniform rod  $AB$  has mass  $6\text{ kg}$  and length  $2\text{ m}$ . The end  $A$  of the rod rests against a rough vertical wall. One end of a light string is attached to the rod at  $B$ . The other end of the string is attached to the wall at  $C$ , which is vertically above  $A$ . The angle between the rod and the string is  $30^\circ$  and the angle between the rod and the wall is  $70^\circ$ , as shown in Figure 3. The rod is in a vertical plane perpendicular to the wall and rests in limiting equilibrium.

Find

- (a) the tension in the string, (4)
- (b) the coefficient of friction between the rod and the wall, (5)
- (c) the direction of the force exerted on the rod by the wall at  $A$ . (2)

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