

Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B277B**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**MODULE M7 – SECTION B**

**MONDAY 21 JUNE 2010: Afternoon**

**DURATION: 30 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Geometrical instruments**

**Tracing paper (optional)**

**Scientific or graphical calculator**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

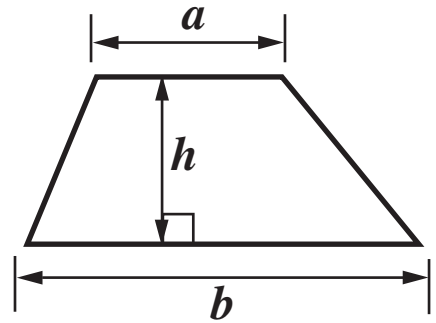
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- Answer ALL the questions.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

## **INFORMATION FOR CANDIDATES**

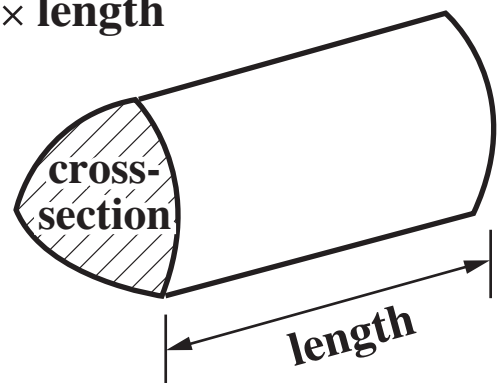
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- Use the  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is 25.

## FORMULAE SHEET

$$\text{Area of trapezium} = \frac{1}{2} (a + b)h$$



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



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- 9 Hugo makes pink paint by mixing red paint and white paint in the ratio 1 : 8.  
Hugo makes 31.5 litres of pink paint altogether.**

**How much red paint and how much white paint does he use?**

**[2 marks]**

**red \_\_\_\_\_ litres**

**white \_\_\_\_\_ litres**

**10 (a) Solve.**

$$5(4x - 7) = 50$$

**[3 marks]**

**(a)** \_\_\_\_\_

**(b) Expand.**

$$(x + 5)(x + 2)$$

**[2 marks]**

**(b)** \_\_\_\_\_

**(c) Rearrange this formula to make  $x$  the subject.**

$$y = 3x - 5$$

**[2 marks]**

**(c)** \_\_\_\_\_

**11** The table below summarises the weights of a group of 100 athletes.

<b>Weight (<math>w</math> kg)</b>	<b>Frequency</b>
<b><math>40 &lt; w \leq 50</math></b>	<b>10</b>
<b><math>50 &lt; w \leq 60</math></b>	<b>26</b>
<b><math>60 &lt; w \leq 70</math></b>	<b>30</b>
<b><math>70 &lt; w \leq 80</math></b>	<b>25</b>
<b><math>80 &lt; w \leq 90</math></b>	<b>9</b>

**(a)** Calculate an estimate of the mean weight of these athletes.

**[4 marks]**

**(a)** \_\_\_\_\_ **kg**



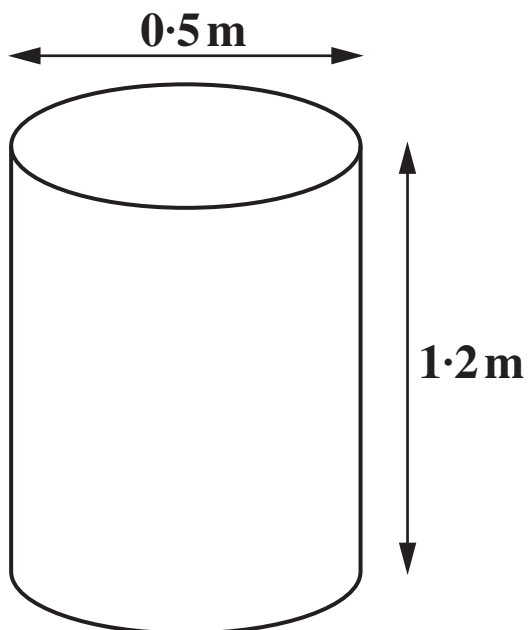
**(b) An athlete is chosen at random from this group.**

**What is the probability that this athlete weighs OVER  
70 kg?**

**[2 marks]**

**(b) \_\_\_\_\_**

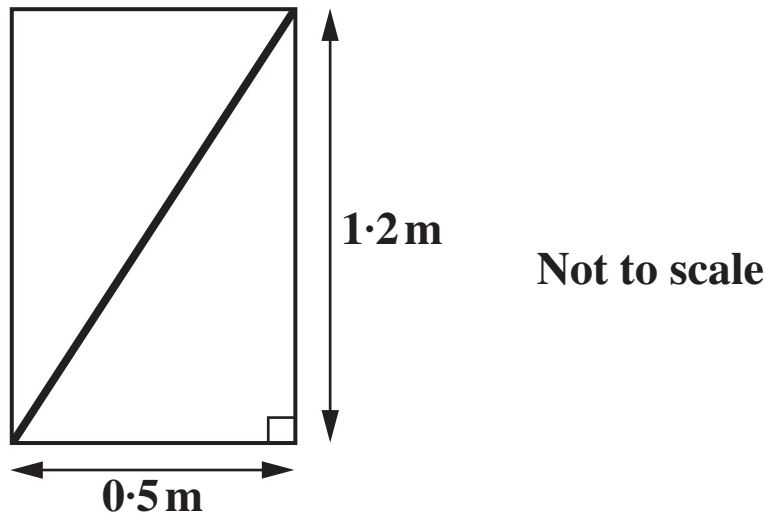
- 12** A cylindrical drum is shown below.  
Its diameter is 0.5 m.  
Its height is 1.2 m.



- (a)** Calculate the volume of the drum.  
[3 marks]

**(a)** \_\_\_\_\_  $\text{m}^3$

**(b) A rod is stored in the drum diagonally, as shown.**



**Does a rod of length  $1.4\text{ m}$  fit inside the drum?  
Show a calculation to justify your answer.  
[4 marks]**

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**TURN OVER FOR QUESTION 13**

**13 Ian takes part in a marathon to raise money for charity. He takes 3 hours and 45 minutes to complete the distance of 42.195 km.**

**Calculate his average speed.  
[3 marks]**

\_\_\_\_\_ km/h



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