

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)**

**M7** 2337B

MODULE M7 – SECTION B

**MONDAY 22 JANUARY 2007**

Morning

Time: 30 minutes

Candidates answer on the question paper.  
Additional materials: Geometrical instruments  
Tracing paper (optional)  
Scientific or graphical calculator



Candidate  
Name

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Centre  
Number

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Candidate  
Number

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**INSTRUCTIONS TO CANDIDATES**

- Write your name, Centre Number and Candidate Number in the boxes above.
- Answer **all** the questions.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- In many questions marks will be given for a correct method even if the answer is incorrect.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- **WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.**

**INFORMATION FOR CANDIDATES**

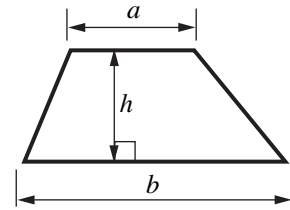
- You are expected to use a calculator in Section B of this paper.
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is 25.
- Section B starts with question 8.
- Use the  $\pi$  button on your calculator or take  $\pi$  to be 3.142 unless the question says otherwise.

For Examiner's Use	
Section B	

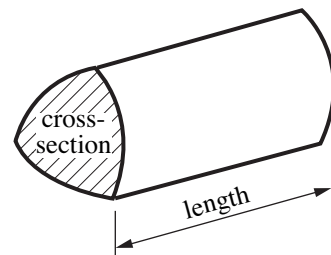
This document consists of 7 printed pages and 1 blank page.

## Formulae Sheet

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



**Volume of prism** = (area of cross-section)  $\times$  length



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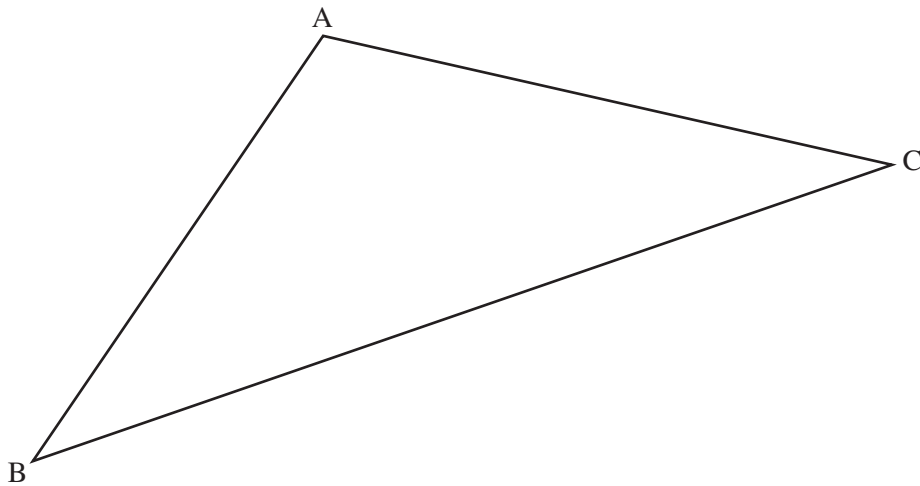
8 Calculate.

$$\frac{38.08 \times 0.3}{6.2 - 3.8}$$

..... [1]

1
---

9 In this question you must use ruler and compasses only.  
Show all your construction lines.



(a) Construct the perpendicular bisector of BC. [2]

(b) Show clearly the point inside triangle ABC which is equidistant from B and C and 2 cm from A.  
Label this point D. [2]

4
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10 The cost of net curtain material is proportional to the length of the material.

Complete the table below.

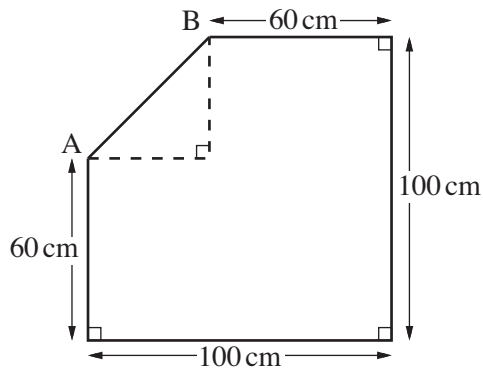
Length	4 m	5.2 m	..... m
Cost	£15.40	£ .....	£9.24

[4]

4
---

11 Rebecca is designing a new kitchen.

This is the plan view of a corner unit with measurements as shown.



Not to scale

Calculate the distance AB.

..... cm [4]

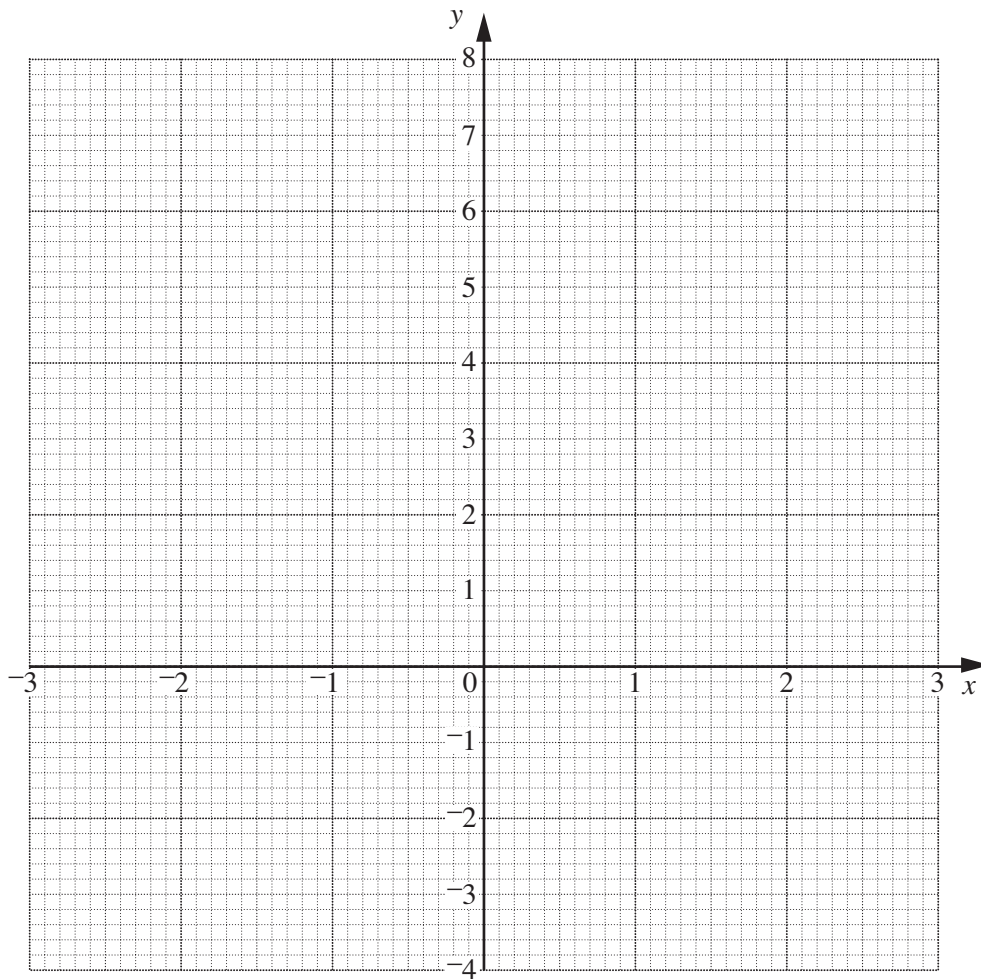
4
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12 (a) Complete the table below for  $y = x^2 - 2$ .

$x$	-3	-2	-1	0	1	2	3
$y$	7			-2			7

[2]

(b) Draw the graph of  $y = x^2 - 2$ .



[2]

(c) Find the values of  $x$  where the graph crosses the  $x$ -axis.

(c)..... [2]

6
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- 13 (a)** A health club records how long members spend in the gym one day. This table summarises the results for 154 members.

Time ( $x$ minutes)	Frequency
$0 < x \leq 30$	25
$30 < x \leq 60$	24
$60 < x \leq 90$	92
$90 < x \leq 120$	13

Calculate an estimate of the mean time spent in the gym.

**(a)**..... minutes [4]

- (b)** Tanya uses the treadmill for a quarter of an hour and walks a distance of 1.3 miles.

At what speed, in miles per hour, has she set the treadmill?

**(b)** ..... mph [2]

6	
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