

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

M5<sup>B245B</sup>

MODULE M5 - SECTION B

**MONDAY 22 JANUARY 2007** 

Morning
Time: 30 minutes

Candidates answer on the question paper.

Additional materials: Geometrical instruments
Tracing paper (optional)

Pie chart scale (optional)
Electronic calculator



Candidate Name						
Centre Number			Candidate Number			

#### **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 7.

For Examiner's Use

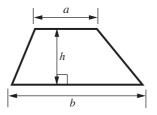
Section B

This document consists of 8 printed pages.

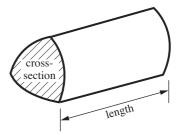
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## Formulae Sheet

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



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



## PLEASE DO NOT WRITE ON THIS PAGE

7

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Details:

An image of a man baking

A bag contains 500g of sugar. Simon uses 200g of this sugar.

What fraction of the sugar does he use? Give your answer in its simplest form.

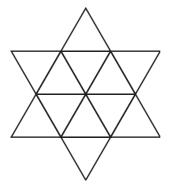
 [2]
2

- 8 Simplify.
  - (a) 2t + 2t + 3t + 4t

(b) 5a + 2b - 3a + 4b

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9 Shade **six** of the small triangles in the shape below to make a pattern with rotation symmetry of order 3.



[2]

10 Omar is comparing the prices of electricity from two suppliers, Western Energy and Green World.

The suppliers use the formulas below to calculate prices.

# **Western Energy**

$$C = 42 + 0.09U$$

### **Green World**

$$C = 0.13U$$

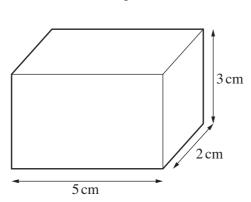
U stands for the number of units of electricity used. C stands for the cost in pounds of the electricity.

Omar uses 875 units of electricity.

Which supplier is cheaper, and by how much?

..... is cheaper by £ ......[4]

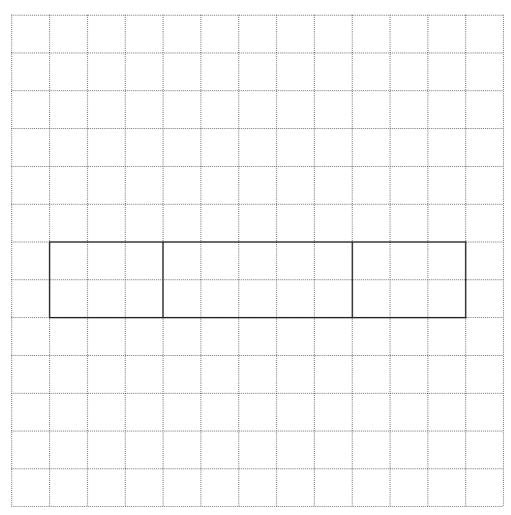
5



(a) Work out the volume of this cuboid.

(a) cm $^3$ [2]	(a)	cm <sup>3</sup>	[2
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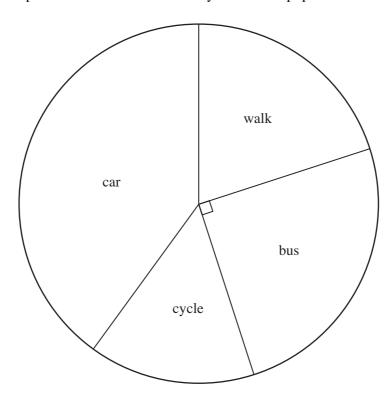
(b) Complete this **full-size** net of the cuboid by drawing the other three faces.



[2]

[Turn over

12 (a) This pie chart represents the results of a survey about how pupils travel to school.



i)	What is the most popular way to get to school?

ii)	What percentage of pupils travel to school by bus?

		(ii)% [1]
(iii)	180 pupils took part in the survey.	

How many pupils travel by car?

(b) The mean distance travelled by the 27 pupils who cycle to school is 2·4km.

Calculate the total distance travelled by these 27 pupils.

(	) km	[2]
	7	

(iii).....[3]

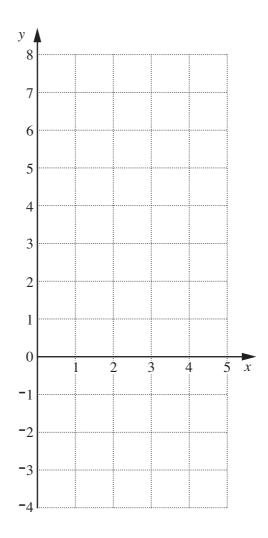
(a)(i).....[1]

13 (a) Complete the table for y = 2x - 3.

х	0	2	4
у		1	

[1]

**(b)** Draw the graph of y = 2x - 3.



[2]

3



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