

# **M5**

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

**B275B** 

MODULE M5 - SECTION B

Candidates answer on the question paper

#### **OCR Supplied Materials:**

None

#### **Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)
- Pie chart scale (optional)
- Electronic calculator

Tuesday 23 June 2009 Morning

**Duration:** 30 minutes



Candidate Forename					Candidate Surname				
Centre Numbe	r					Candidate N	umber		

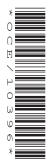
#### **MODIFIED LANGUAGE**

### **INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- 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.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided, however additional paper may be used if necessary.

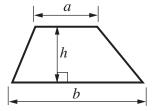
#### **INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 6.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is 25.
- This document consists of **8** pages. Any blank pages are indicated.

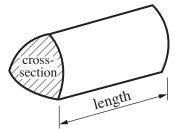


### **Formulae Sheet**

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

6 The conductor of an orchestra is choosing a concert programme. The concert will be an overture followed by a symphony. He must choose one of three overtures (A, B or C). He must choose one of four symphonies (1, 2, 3 or 4).

(a) List all the possible concert programmes. One has been done for you.

You may not need all the lines.

Overture	Symphony
A	1

[2]

(b) He chooses one of these concert programmes at random.

What is the probability that he chooses overture A with symphony 2?

(b) .....[1]

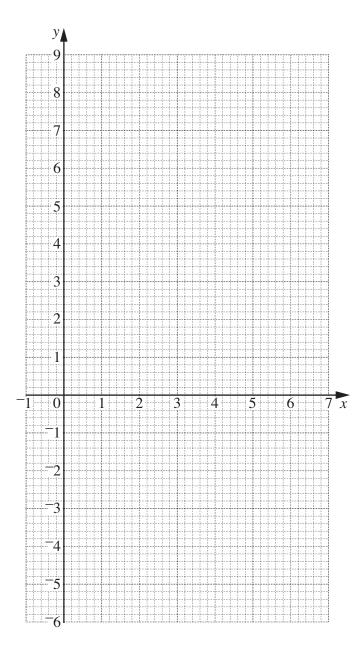
© OCR 2009 Turn over

7 (a) Complete this table for y = 2x - 4.

х	0	3	6
у			8

[1]

**(b)** Draw the graph of y = 2x - 4.



[2]

(c) Use your graph to find y when x = 0.5.

(c) .....[1]

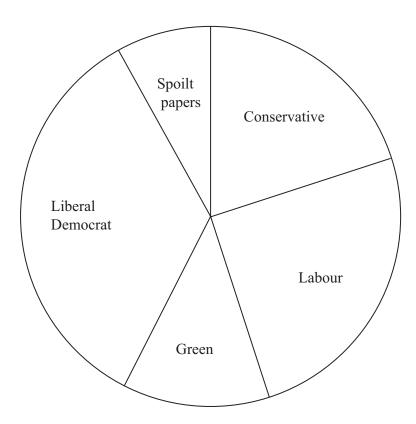
(a) This formula gives the perimeter, H, of a regular hexagon with side s.

		H = 6s	
		Find the perimeter of a regular hexagon of side 4 cm.	
			(a) cm [1]
	<b>(b)</b>	This formula gives the perimeter, $R$ , of a particular irregular penta some equal sides.	gon with
		R = 2L + 3W	
		Two of the sides each have length $L$ . Three of the sides each have length $W$ .	
		Find the perimeter of this pentagon when $L = 3.1 \text{ cm}$ and $W = 5 \text{ cm}$	n.
			4)
			(b) cm [2]
)	(a)	The attendance at Marston Rovers' last home match was 5472.	
		Round 5472 to the nearest hundred.	
			(a)[1]
	<b>(b)</b>	The mean attendance at Marston Rovers' matches last season was	3451.875.
		Round 3451·875 to the nearest integer.	
			(b)[1]
	(c)	Marston High School has 800 students. 96 of them attended Marston Rovers' match last Saturday.	
		What percentage of the students attended the match?	

(c) ...... % [2]

© OCR 2009 Turn over

**10** (a) 200 people voted in a parish council election. This pie chart summarises the results.



(i) Janine says that 50 people voted Labour.

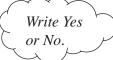
Is Janine correct? Give a reason for your answer.



because	
	[1]

(ii) Leonardo says that  $\frac{1}{5}$  of the people voted Conservative.

Is Leonardo correct? Give a reason for your answer.



becaus	e	 	•••••
			[2]

(	(iii)	How	many	people	voted	Green'
٨		, 110 W	many	people	voicu	OICCII

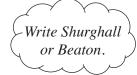
(a)(iii)	 [2]

(b) People in Shurghall and Beaton travel to vote.

This table shows some information about how far, in kilometres, they travel to vote.

	Shurghall	Beaton
Mean	2.4	1.7
Range	3.6	

- (i) In Beaton, the shortest distance that people travel to vote is 0·1 km and the furthest is 4·3 km.Complete the table.
- (ii) Complete the following.



The distances that people travel to vote are more varied in .....



This is shown by the ......[1]

# **TURN OVER FOR QUESTION 11**

11	Triangle A	ABC has	sides AB	$=7.2\mathrm{cm}$	AC = 5.4  cm	and BC = $6.1$	cm
	11111112101	IDC Has	SIGCS I ID	- / Z CIII.	$I \cup - J + \cup I$		$\sim$ 111

(a) Using ruler and compasses, construct triangle ABC.Line AB has been drawn for you.Leave in all your construction lines.



**(b)** Measure angle C.

(b) .....° [1]



#### Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations, is given to all schools that receive assessment material and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1PB.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.