



**M5**

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)  
MODULE M5 (SECTION B)**

**B275B**



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 21 June 2011  
Afternoon**

**Duration: 30 minutes**



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

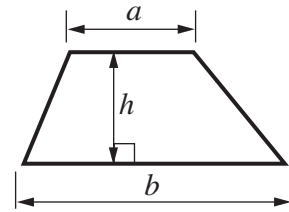
- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- 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).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

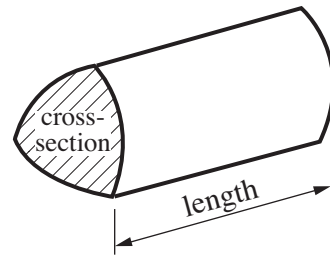
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank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

## Formulae Sheet

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



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



**PLEASE DO NOT WRITE ON THIS PAGE**

8 Ruth and Joy grow potatoes. They each weighed the first ten potatoes they dug up. Here are the weights, in grams, of Ruth's potatoes.

160 182 195 180 74 106 210 167 170 83

(a) Calculate the range of these weights.

(a) ..... g [1]

(b) Calculate the mean weight of Ruth's potatoes.

(b) ..... g [3]

(c) For Joy's potatoes:

- the range was 160 g,
- the mean was 145 g.

(i) Joy says:

**My potatoes weigh more than Ruth's.**

Is Joy right? Explain how you decided.

..... because ..... [1]

(ii) Ruth says:

**The weights of my potatoes are more consistent than Joy's.**

Is Ruth right? Explain how you decided.

..... because ..... [1]

9 (a)  $P = A + 2B$ .

Find the value of  $P$  when  $A = 3.1$  and  $B = 2.7$ .

(a) ..... [2]

(b) Simplify.

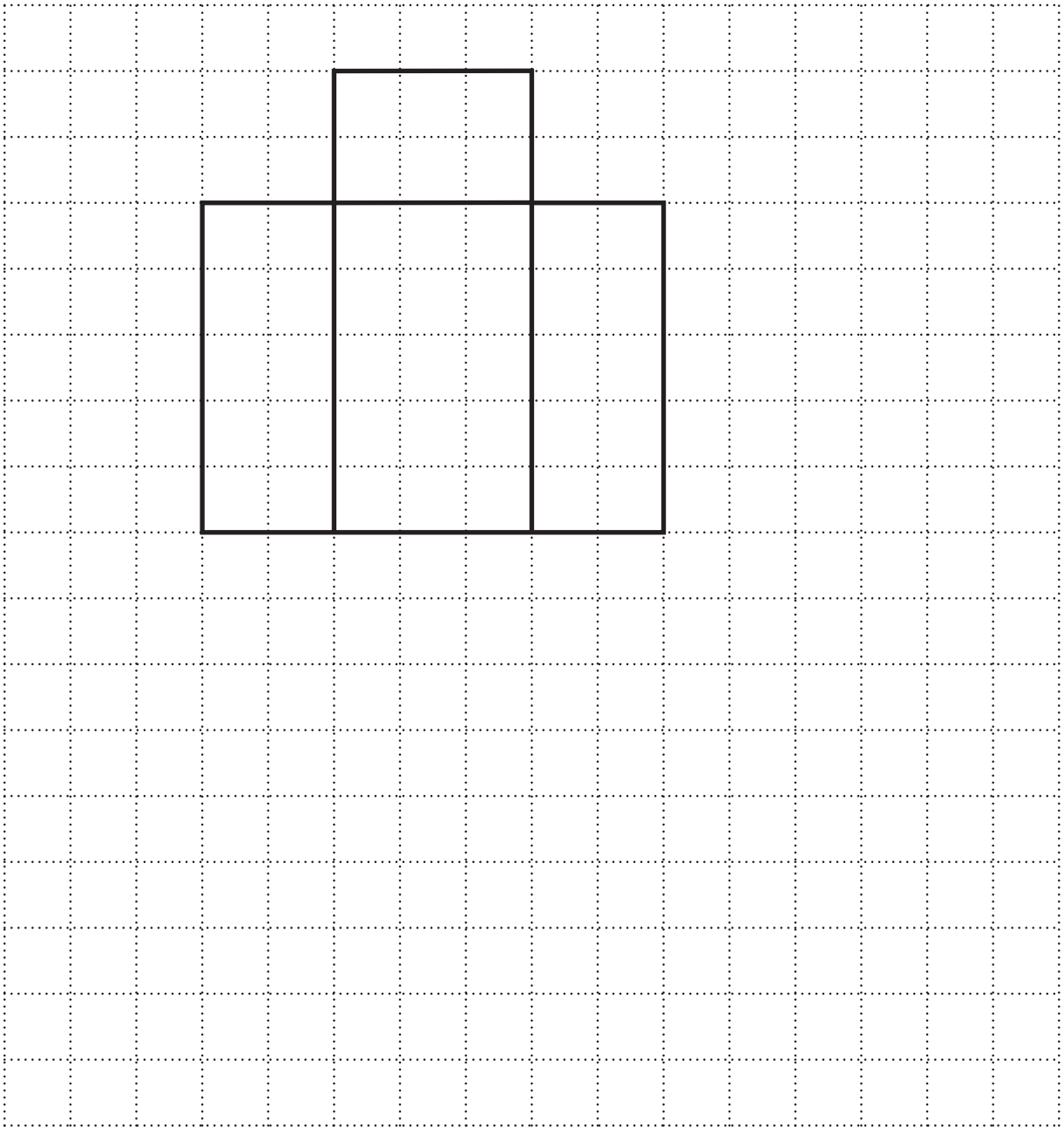
(i)  $2c - c$

(b)(i) ..... [1]

(ii)  $12x - 6 - 5x + 4$

(ii)..... [2]

- 10 On this centimetre grid, the net of a cuboid has been started.



- (a) Complete the net. [2]
- (b) Work out the volume of the cuboid.

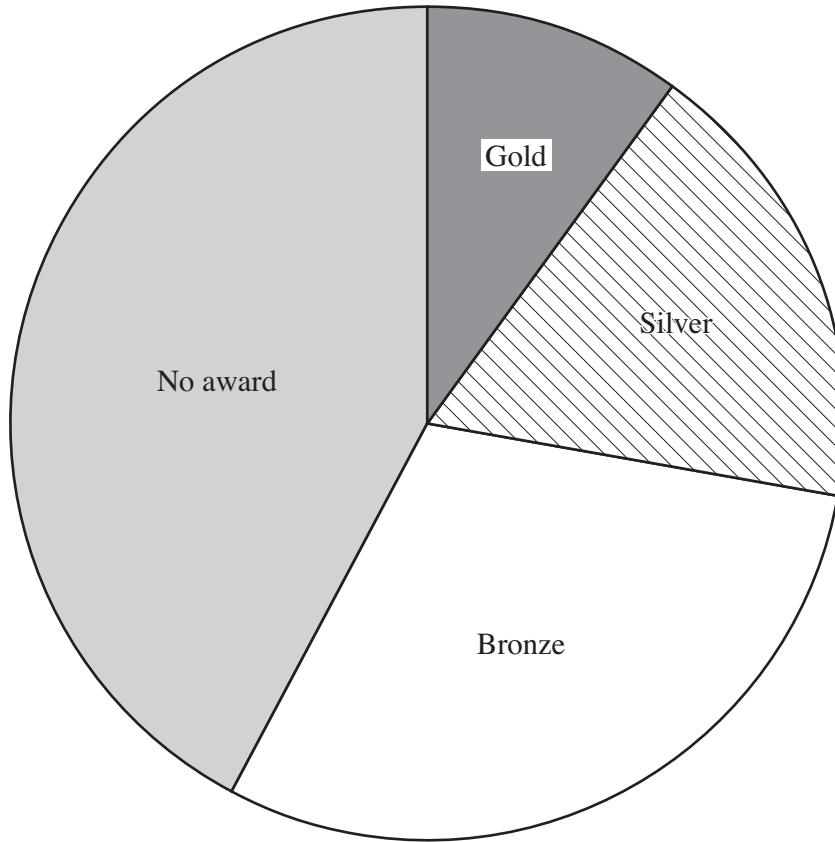
(b) .....  $\text{cm}^3$  [2]

- 11 (a) In year 9 at Fairacres school there are 120 students.  
One day, 20% of these students are **not** in school.  
 $\frac{2}{3}$  of those students who are in school are chosen to enter a maths challenge.

How many year 9 students are chosen for the maths challenge?

(a) ..... [4]

(b) For taking part in the challenge, students receive a Gold, Silver or Bronze award, or no award. This pie chart summarises the awards for the whole school.



18 students received a Gold award.

How many students received a Bronze award?  
Explain your reasoning.

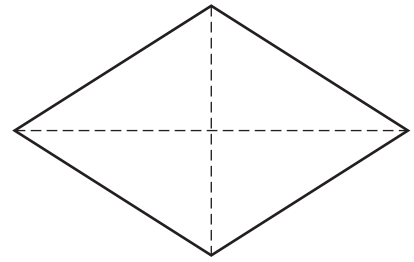
..... because .....

.....

..... [2]

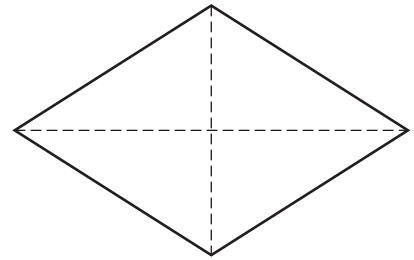
**TURN OVER FOR QUESTION 12**

- 12 (a) (i) Add shading to this shape so that it has no lines of symmetry but rotation symmetry of order 2.



[1]

- (ii) Add shading to this shape so that it has no lines of symmetry but rotation symmetry of order 1.



[1]

- (b) For each of these statements, write whether it is true or false for an **isosceles trapezium**.

	True / False
It has two sets of parallel sides.	.....
It has only one pair of equal angles.	.....
Its diagonals have equal length.	.....
Its diagonals bisect each other at right angles.	.....

[2]

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