

**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

**Thursday 21 January 2010**  
**Afternoon**

**Duration: 30 minutes**



Candidate Forename		Candidate Surname	
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Centre Number							Candidate Number				
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**INSTRUCTIONS TO CANDIDATES**

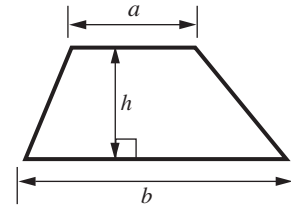
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. 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**

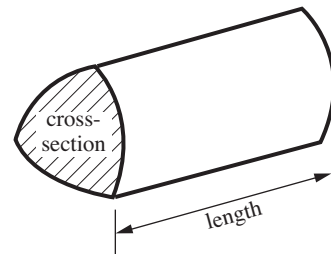
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 7.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

## Formulae Sheet

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



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



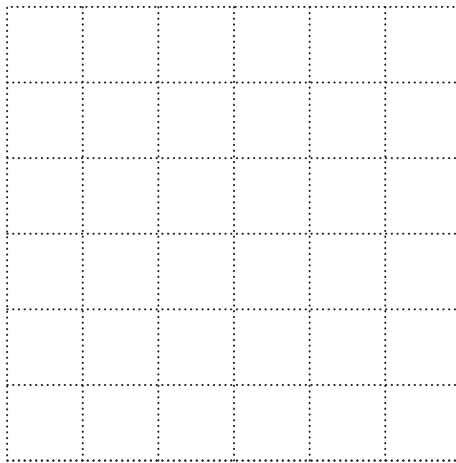
**PLEASE DO NOT WRITE ON THIS PAGE**

- 7 (a) Two different types of quadrilateral have all four sides equal. One is a square.

Write down the name of the other.

(a) ..... [1]

- (b) (i) Draw a kite on the grid below.

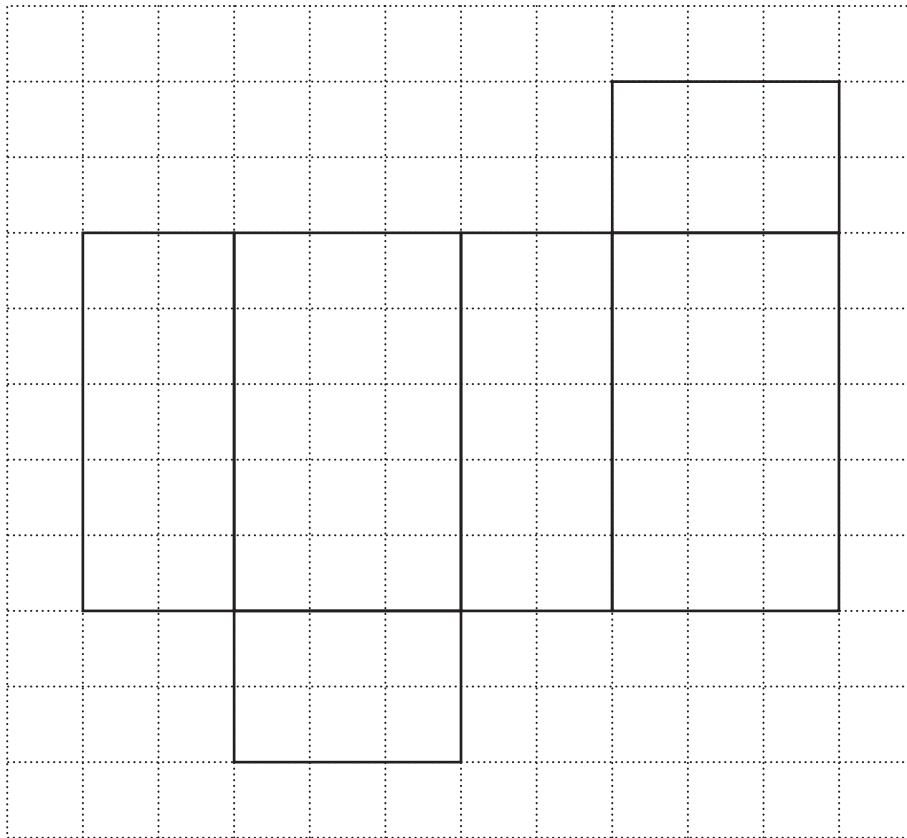


[1]

- (ii) How many lines of symmetry does a kite have?

(b)(ii) ..... [1]

- 8 (a) This is the full-sized net of a cuboid.



The net is folded to make the cuboid.

- (i) Complete the following.

The cuboid measures ..... cm by ..... cm by ..... cm.

[1]

- (ii) Work out the volume of the cuboid.  
Give the units of your answer.

(a)(ii) ..... [3]

(b) The total surface area of a cuboid can be found using the formula

$$S = 2A + 2B + 2C$$

where  $A$  is the area of the front,  
 $B$  is the area of the side and  
 $C$  is the area of the base.

Find  $S$  when  $A = 10 \text{ cm}^2$ ,  $B = 5 \text{ cm}^2$  and  $C = 8 \text{ cm}^2$ .

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

- 9 (a) A weekly bus pass costs £15.00.  
The price is increased by 5%.

How much **extra** will the bus pass cost after the increase?  
Give your answer in pence.

(a) ..... p [2]

- (b) On one bus, 30 out of the 45 passengers have a bus pass.

What fraction of the passengers have a bus pass?  
Give your fraction in its simplest form.

(b) ..... [2]

- 10 Solve.

(a)  $4x - 3 = 17$

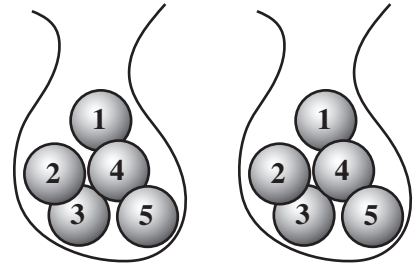
(a) ..... [2]

(b)  $19 = 2x + 8$

(b) ..... [2]

11 Two bags each contain five balls, numbered from 1 to 5.

In a game, Charlie takes a ball at random from each bag. He **multiplies** the numbers on the two balls to get his score.



(a) Complete the table to show all the possible scores.

×	1	2	3	4	5
1					
2					10
3				12	
4					
5	5				

[2]

(b) Find the probability that Charlie's score is 16.

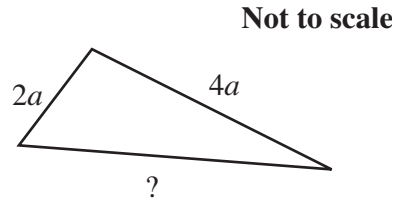
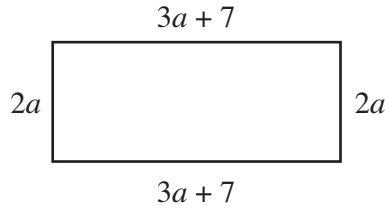
(b) ..... [1]

(c) Find the probability that Charlie's score is **greater than** 10.

(c)..... [2]

**TURN OVER FOR QUESTION 12**

12



The perimeter of this rectangle is equal to the perimeter of this triangle.

Find an expression for the missing length in the triangle.

..... [3]

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