

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
MODULE M4 – SECTION B

**B274B**

Candidates answer on the question paper

**OCR Supplied Materials:**

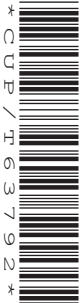
None

**Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)
- Electronic calculator

**Tuesday 20 January 2009**  
**Morning**

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.

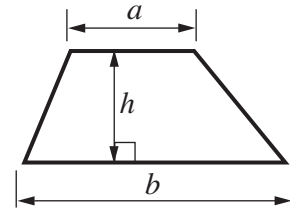
**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 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.

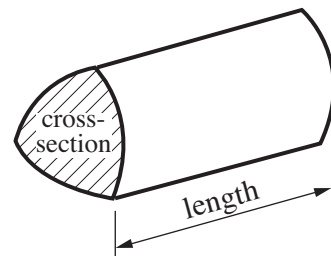
<b>FOR EXAMINER'S USE</b>	
<b>SECTION B</b>	

Formulae Sheet

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



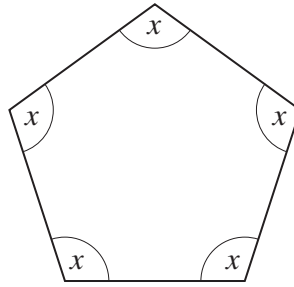
**Volume of prism** = (area of cross-section)  $\times$  length



**PLEASE DO NOT WRITE ON THIS PAGE**

3

- 8 (a) This is a regular pentagon.



Write a formula connecting

- $T$  the total of the angles, and  
 $x$  the size of each angle.

(a) ..... [2]

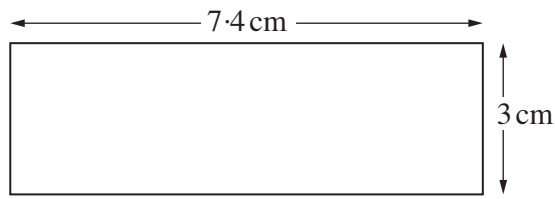
- (b) Tim is working out the size of an angle in a puzzle.  
He is using the equation  $4y = 360$ .

Solve  $4y = 360$ .

(b) ..... [1]

4

9 (a) Work out the area of this rectangle.



Not to scale

(a) ..... cm<sup>2</sup> [2]

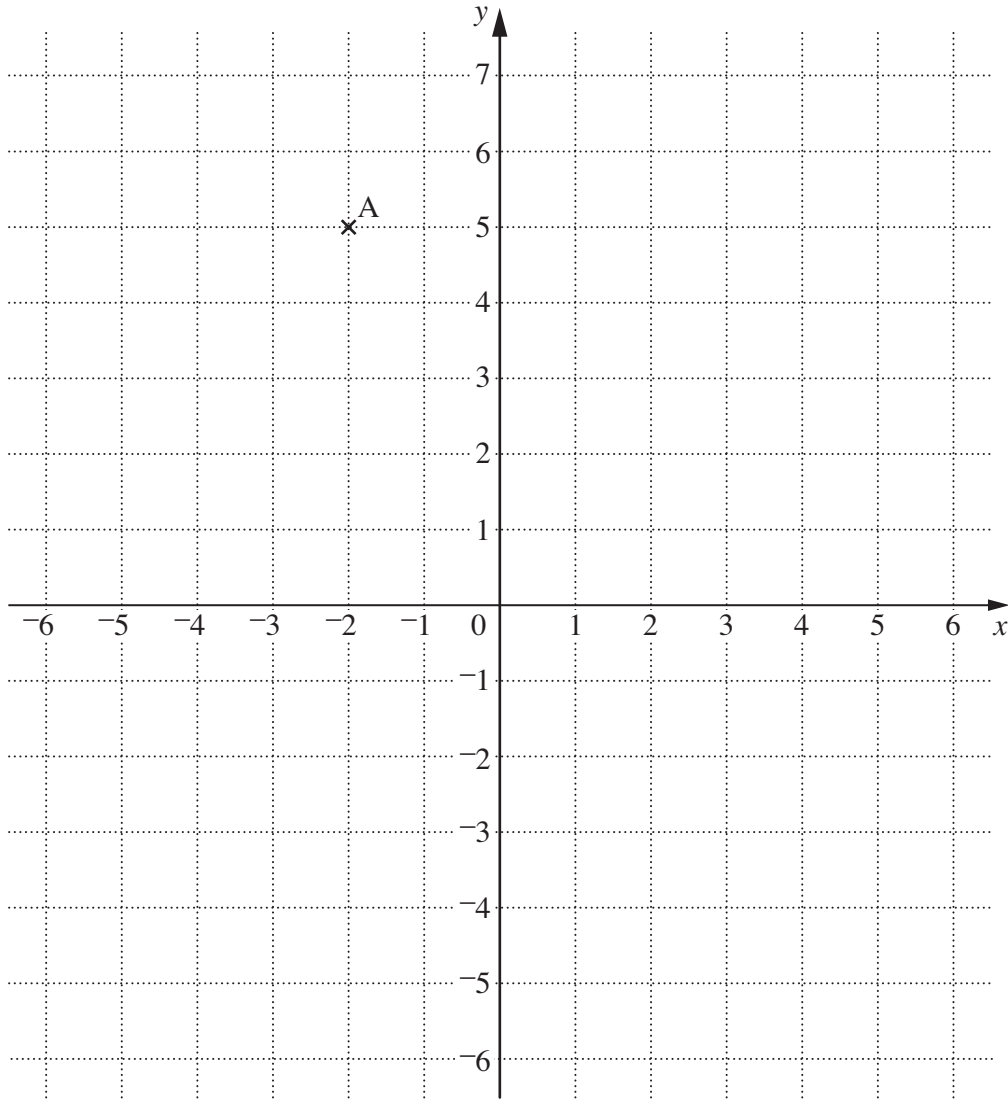
(b) Draw the lines of symmetry on this rectangle.



[2]

5

(c)



(i) Write down the coordinates of point A.

(c)(i) (..... , ..... ) [1]

(ii) Plot point B at  $(-6, 5)$  and point C at  $(-6, -2)$ .  
Label your points B and C.

[2]

(iii) A, B and C are corners of a rectangle.  
D is the fourth corner of the rectangle.

Mark D on the diagram.

Write down the coordinates of point D.

(iii) (..... , ..... ) [2]

6

- 10** Susie is a salesperson.  
She sends emails to her customers about special offers.  
She keeps a record of the results.

Results	Total
No reply	25
Reply email only	20
Sale	5

- (a) Use these results to find the probability that she gets No reply.  
Write your answer in its simplest form.

(a) ..... [2]

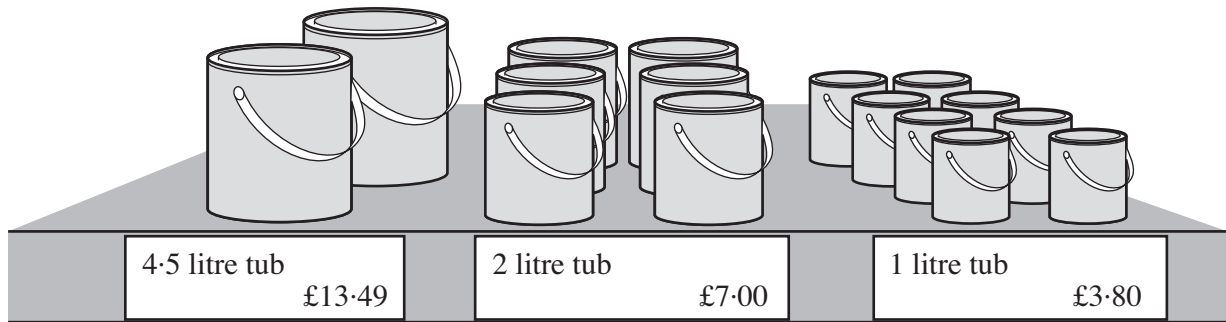
- (b) Find the probability that she gets a Sale.

(b) ..... [1]

- (c) The next day she sends a special offer email to 200 customers.  
How many Sales does she expect from 200 customers?

(c) ..... [1]

11 Ailsa is buying paint.



She knows that 1 litre of paint covers  $8.6\text{ m}^2$  of wall.  
She needs enough paint to cover  $100\text{ m}^2$  of wall.

She wants to buy the **cheapest** combination of tubs and have enough paint.

Which tubs should she buy, and what is the total cost?

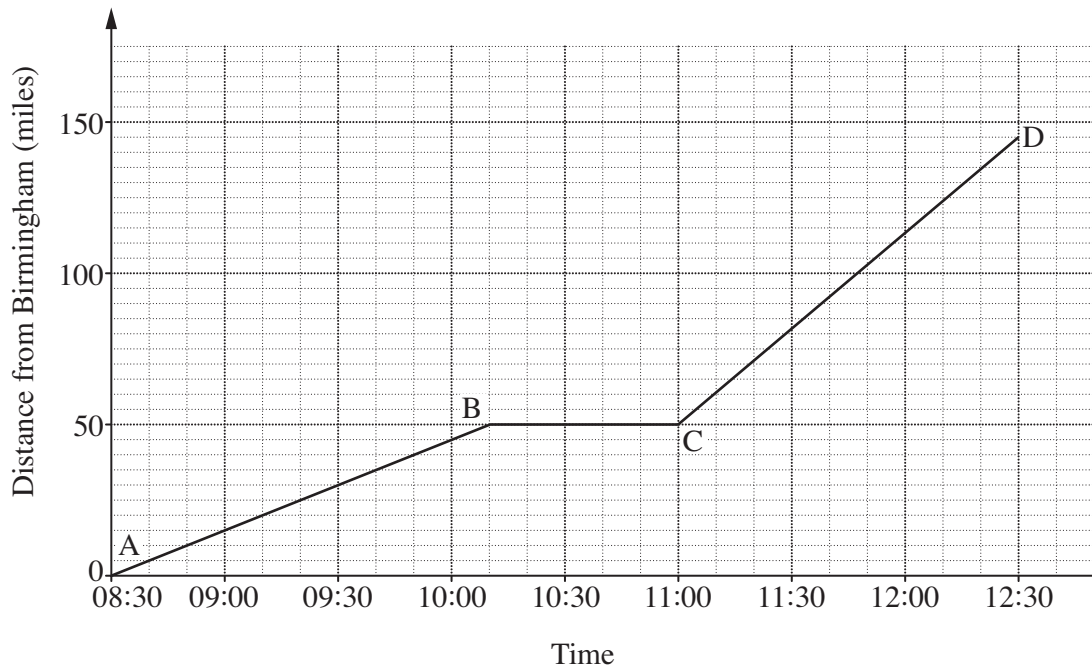
**Show all your working.**

..... 4.5 litre tubs    ..... 2 litre tubs    ..... 1 litre tubs

Total cost = £ ..... [5]

**TURN OVER FOR QUESTION 12**

- 12 Andy travelled on a steam train from Birmingham to Newport. During the journey the train stopped at Hereford. This graph shows his train journey.



- (a) At what time did the train arrive in Hereford?

(a) ..... [1]

- (b) How many miles was the journey from Birmingham to Newport?

(b) ..... [1]

- (c) Which part of the journey was fastest?  
Explain how you can tell from the graph.

..... was fastest because ..... [1]

- (d) On the return journey, the train left Hereford at 17:20.  
The journey from Hereford to Birmingham took 70 minutes.

At what time did the train arrive in Birmingham?

(d) ..... [1]