

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.

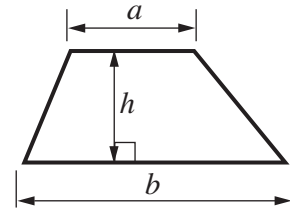
INFORMATION FOR CANDIDATES

- 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.

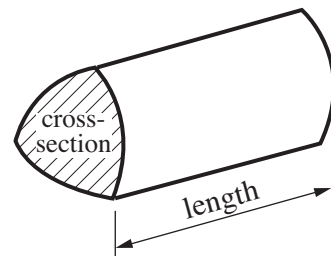
FOR EXAMINER'S USE	
SECTION B	

Formulae Sheet

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

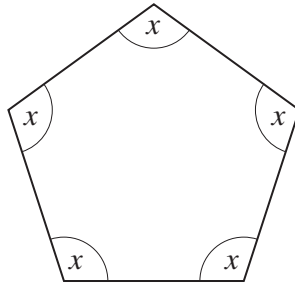


Volume of prism = (area of cross-section) \times length



PLEASE DO NOT WRITE ON THIS PAGE

- 8 (a) This is a regular pentagon.



Write a formula connecting

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

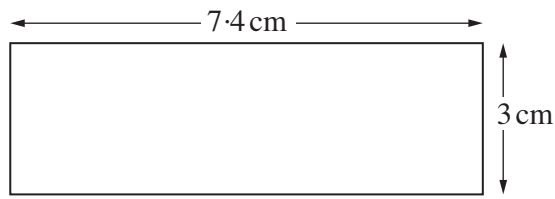
(a) [2]

- (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]

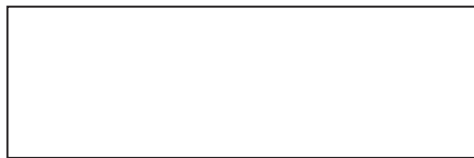
9 (a) Work out the area of this rectangle.



Not to scale

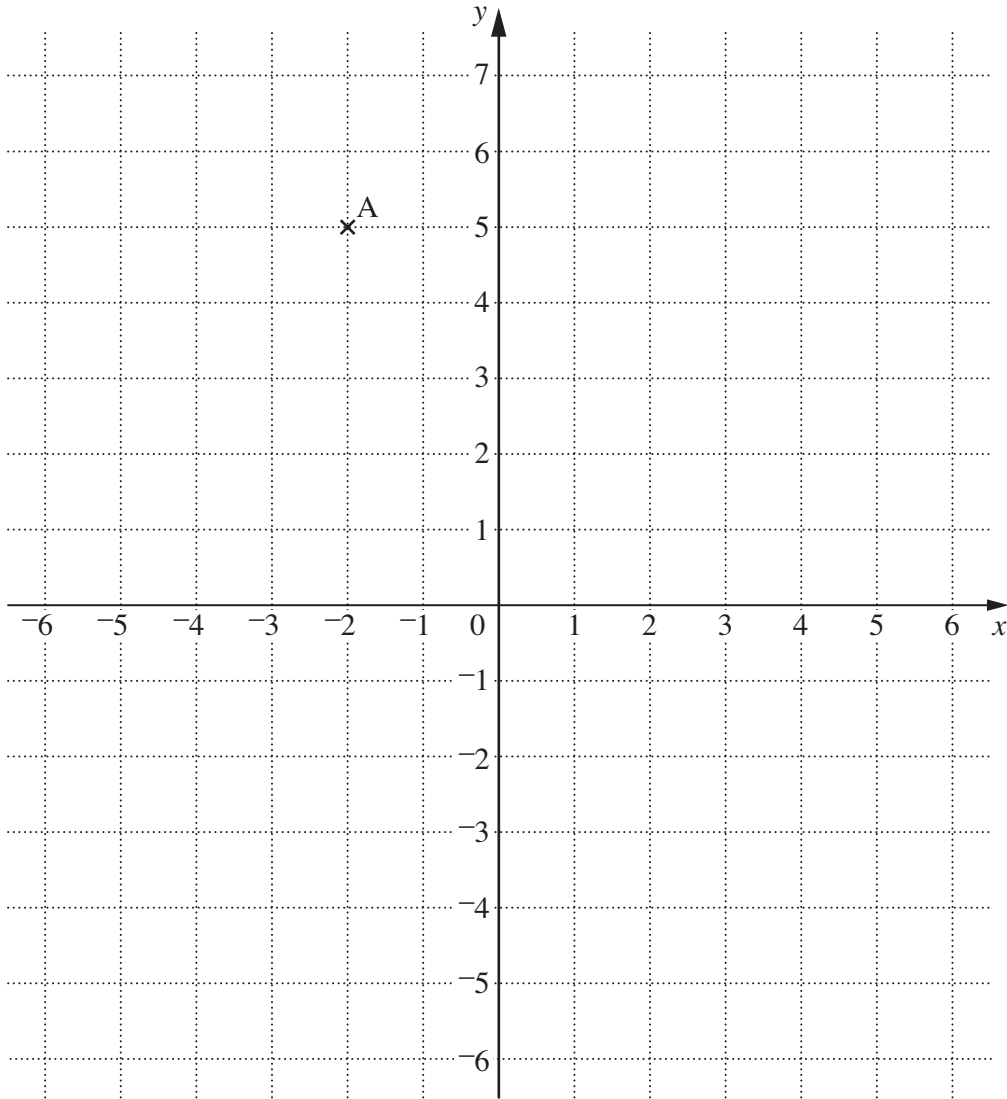
(a) cm² [2]

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



[2]

(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]

- 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.

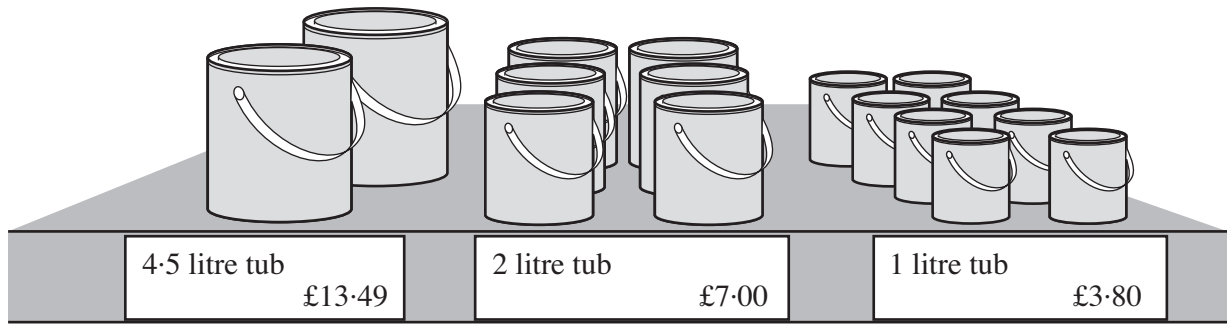
(b) [1]

- (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 m^2 of wall.
She needs enough paint to cover 100 m^2 of wall.

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

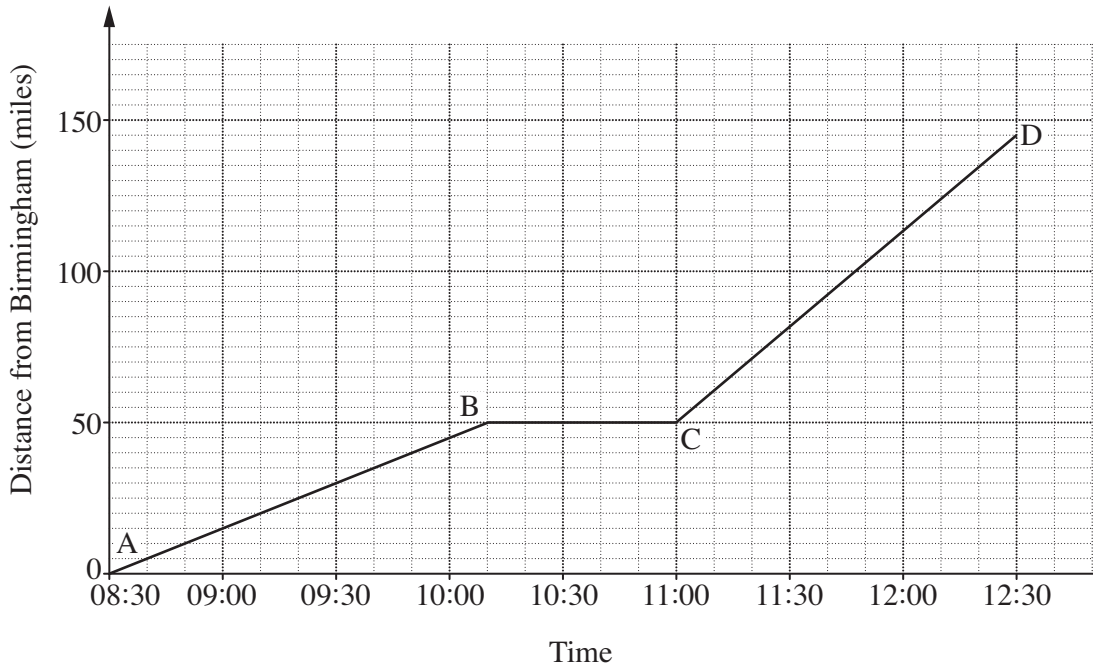
Which tubs should she buy, and what is the total cost?
Show all your working.

..... 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]