

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
MODULE M7 – SECTION A

## B277A

Candidates answer on the question paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)

**Monday 9 March 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.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

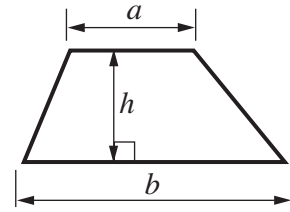
**WARNING**

No calculator can be used for Section A of this paper

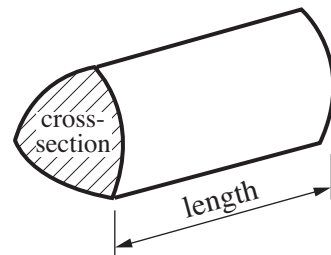
FOR EXAMINER'S USE	
SECTION A	
SECTION B	
<b>TOTAL</b>	

## 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**

1 (a) Write 225 as a product of its prime factors.

(a) ..... [3]

(b) Find.

(i)  $\sqrt{225}$

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

(ii) the cube root of 64

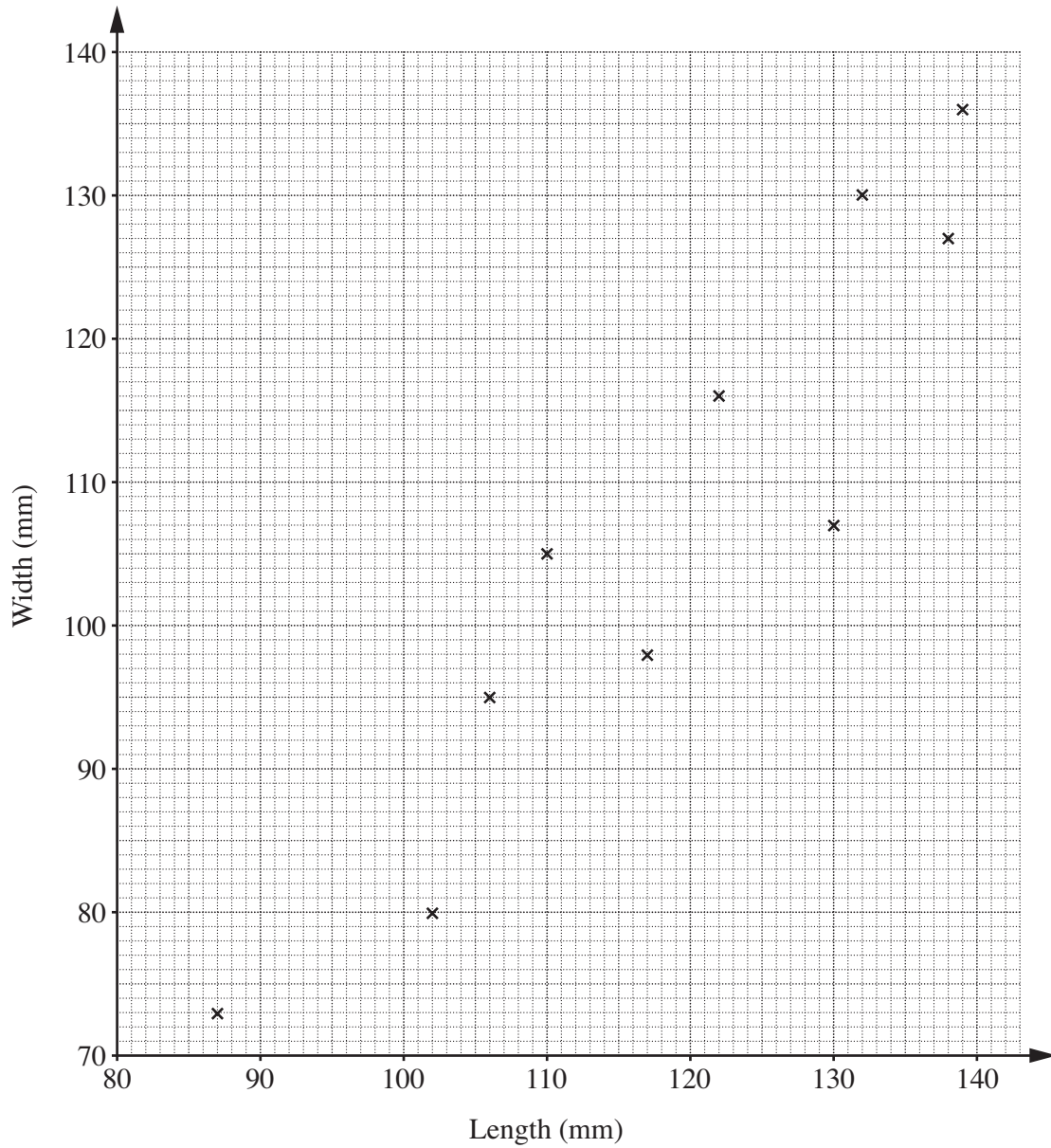
(ii) ..... [1]

2 A piece of brass is made from copper and zinc in the ratio 2 : 1.  
The piece weighs 4.8 kg.

Calculate the weight of the copper.

..... kg [2]

- 3 Lara measures the length and width of leaves from a tree. The scatter diagram shows her results.



- (a) What type of correlation is shown in this diagram?

(a) ..... [1]

- (b) (i) Draw a line of best fit.

[1]

- (ii) Use your line of best fit to estimate the width of a leaf from this tree with length 120 mm.

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

5

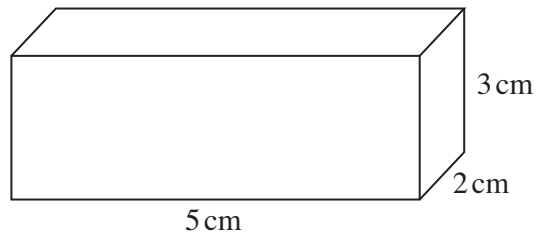
(c) Kevin finds a leaf with a length of 100 mm and a width of 130 mm.

Is it likely that Kevin's leaf is from this tree?

Explain your answer.

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

4



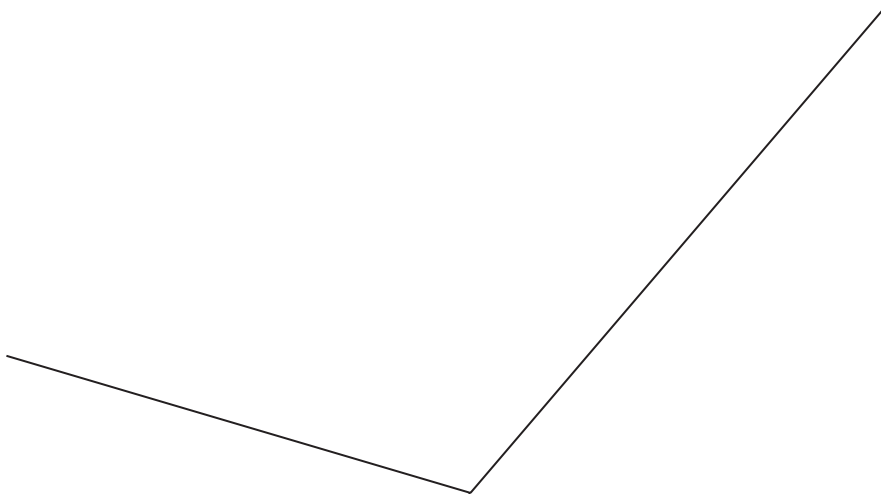
Show that the total surface area of this cuboid is  $62 \text{ cm}^2$ .

[3]

6

- 5 Use ruler, compasses and pencil only to answer this question.  
Leave in all your construction lines.

Construct the bisector of this angle.



[2]

6 Here are the first four terms of a sequence.

5    8    11    14

Write down an expression for the  $n$ th term of this sequence.

..... [2]

7 Here is an inequality.

$$-4 < 3n \leq 12$$

(a) Explain why  $n = 5$  does not satisfy this inequality.

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

(b) Write down all the integer values of  $n$  that satisfy this inequality.

(b) ..... [3]

**TURN OVER FOR QUESTION 8**

8 Bag A contains counters coloured red, blue or yellow.



(a) A counter is drawn at random from bag A.

Complete the table below to show the probability of getting each colour.

red	blue	yellow
0.35	0.25	

[2]

Bag B also contains counters coloured red, blue or yellow.

The table below shows the probability of drawing, at random, a counter of each colour from bag B.



red	blue	yellow
0.45	0.2	0.35

(b) Janet says:

**Bag B has more red counters than bag A.**

Which of the following is correct?

Explain your answer.

- P Janet is definitely right.
- Q Janet is definitely wrong.
- R There is not enough information to decide.



..... because .....

..... [1]

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