

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)

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

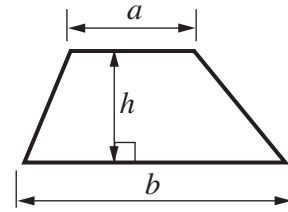
WARNING

No calculator can be used for Section A of this paper

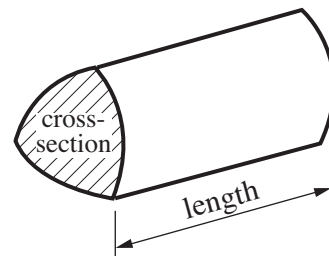
FOR EXAMINER'S USE	
SECTION A	
SECTION B	
TOTAL	

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) Asha and Billy share a bag of grapes in the ratio 2 : 1.
There are 24 grapes in the bag.

How many grapes does Asha get?

(a) [2]

- (b) Clive, Davina and Eddie share another bag of grapes in the ratio 2 : 5 : 3.
Davina gets 20 grapes.

How many grapes does Clive get?

(b) [2]

2 (a) Write down the value of $\sqrt{169}$.

(a) [1]

(b) Change $\frac{2}{9}$ to a recurring decimal.

(b) [2]

3 A full jug holds 0.4 litres of water.
A bucket can hold 10 litres of water.

How many jugs of water are needed to fill the bucket?

..... [2]

- 4 (a) Margaret goes on holiday to France.
She pays £180 altogether for the ferry.
Her other expenses are £120 for each day of her holiday.

Write a formula for the total cost, £ C , of her holiday when it lasts for n days.

(a) [2]

- (b) Keith used this formula for the total cost of his holiday.

$$C = 90n + 480$$

£ C is the total cost and n is the number of days his holiday lasted.
The total cost of Keith's holiday was £1200.

How many days did his holiday last?

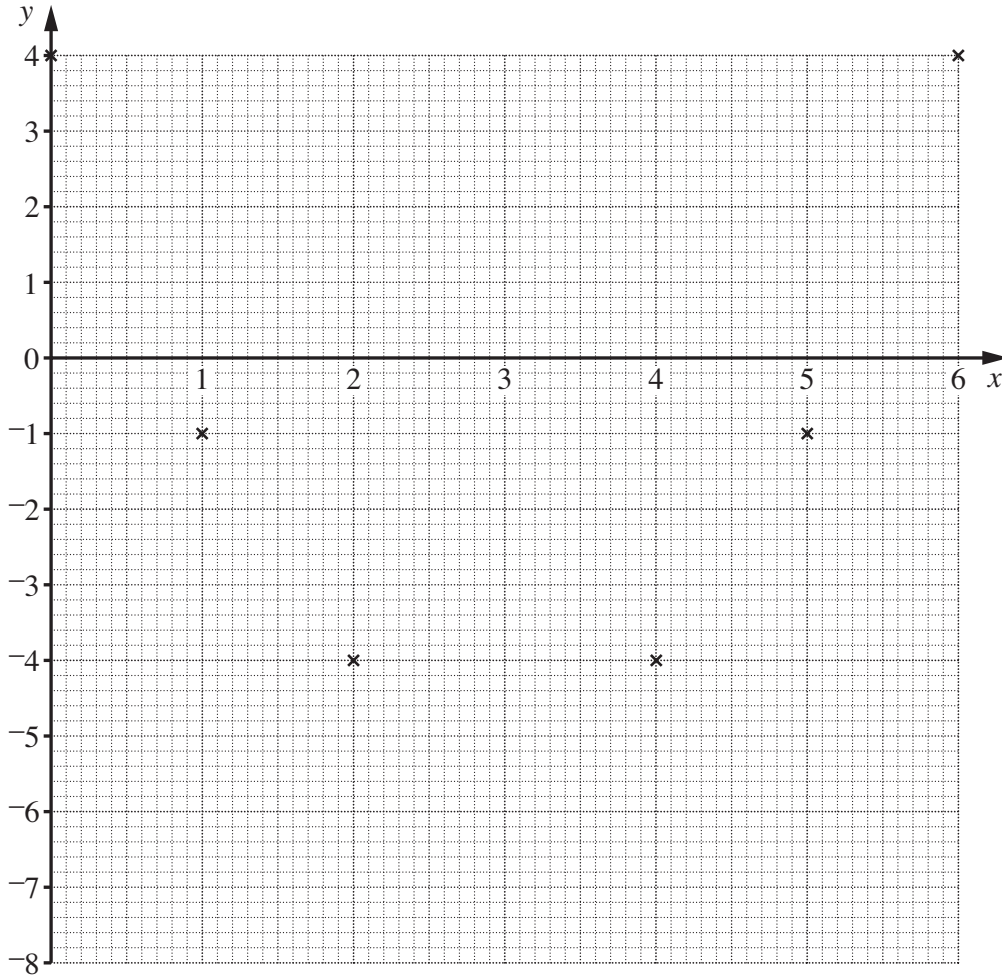
(b) [2]

5 (a) Complete this table for $y = x^2 - 6x + 4$.

x	0	1	2	3	4	5	6
y	4	-1	-4		-4	-1	4

[1]

(b) Complete this graph for $y = x^2 - 6x + 4$ for values of x from 0 to 6.

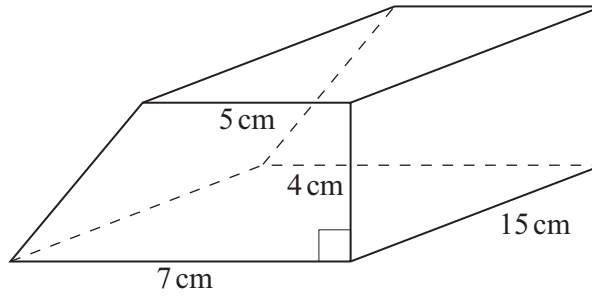


[1]

(c) Use the graph to find the values of x for which $x^2 - 6x + 4 = 0$.
Give your answers correct to 1 decimal place.

(c) [2]

- 6 The cross-section of a prism is a trapezium.
The trapezium has height 4 cm and its parallel sides are 5 cm and 7 cm.
The length of the prism is 15 cm.



Calculate the volume of the prism.

..... cm³ [3]

TURN OVER FOR QUESTION 7

7 (a) Multiply out.

$$3(2x - 5)$$

(a) [1]

(b) Solve this inequality.

$$4x > x + 12$$

(b) [2]

(c) Here are the first four terms of a sequence.

97 94 91 88

Find an expression for the n th term of this sequence.

(c) [2]