

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

B277B

Candidates answer on the question paper

OCR Supplied Materials:

None

Other Materials Required:

- Geometrical instruments
- Tracing paper (optional)
- Scientific or graphical calculator

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.

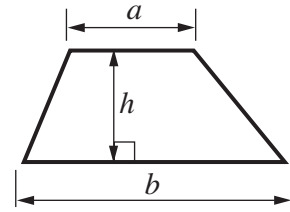
INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

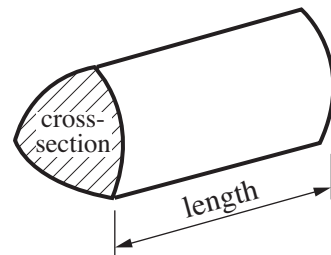
FOR EXAMINER'S USE	
SECTION B	

Formulae Sheet

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



$$\text{Volume of prism} = (\text{area of cross-section}) \times \text{length}$$



PLEASE DO NOT WRITE ON THIS PAGE

9 5 litres of petrol costs £5.35.

How much would 8.6 litres cost?

£ [2]

10 A digital television costs £850.
The price is reduced by 8%.

Calculate the reduced price.

£ [3]

- 11 Bilal measures the heights of 80 trees.
His results are summarised in this table.

Height (h cm)	Midpoint	Frequency
$0 < h \leq 50$	25	3
$50 < h \leq 100$		14
$100 < h \leq 150$		15
$150 < h \leq 200$		23
$200 < h \leq 250$		17
$250 < h \leq 300$		8

Calculate an estimate of the mean height of the trees.

..... cm [3]

12 (a) Show that the equation $x^3 + x^2 = 20$ has a solution between 2 and 3.

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

(b) Use trial and improvement to find this solution correct to one decimal place.
You must show your trials and their outcomes.

(b) [3]

13 (a) Multiply out.

$$(x + 5)(x + 2)$$

(a) [2]

(b) Solve.

$$5(x + 2) = 12 + x$$

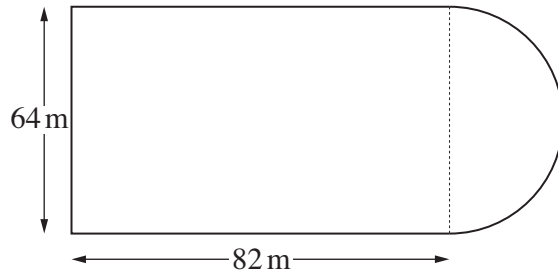
(b) [3]

14 A train travels 270 km in 2 hours 30 minutes.

Calculate the average speed of the train.

..... km/h [3]

- 15 The diagram shows a piece of land.
It is formed from a rectangle and a semicircle with radius 32 m.



The land is valued at £5.50 per square metre.

Calculate the total value of this piece of land.

£ [5]

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