

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 21 June 2010
Afternoon

Duration: 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

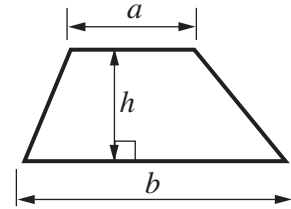
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. 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. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

INFORMATION FOR CANDIDATES

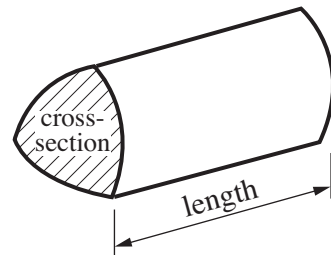
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 9.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total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

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 Hugo mixes red paint and white paint in the ratio 1 : 8 to make pink paint.
Hugo makes 31.5 litres of pink paint altogether.

How much red paint and how much white paint does he use?

red litres
white litres [2]

10 (a) Solve.

$$5(4x - 7) = 50$$

(a) [3]

(b) Expand.

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

(b) [2]

(c) Rearrange this formula to make x the subject.

$$y = 3x - 5$$

(c) [2]

11 The table below summarises the weights of a group of 100 athletes.

Weight (w kg)	Frequency
$40 < w \leq 50$	10
$50 < w \leq 60$	26
$60 < w \leq 70$	30
$70 < w \leq 80$	25
$80 < w \leq 90$	9

(a) Calculate an estimate of the mean weight of these athletes.

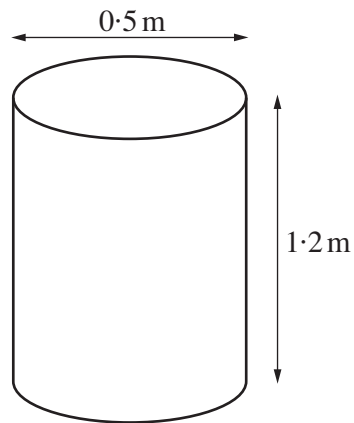
(a) kg [4]

(b) An athlete is chosen at random from this group.

What is the probability that this athlete weighs **over** 70 kg?

(b) [2]

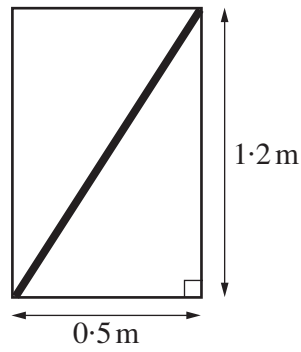
- 12 A cylindrical drum is shown below.
Its diameter is 0.5 m.
Its height is 1.2 m.



- (a) Calculate the volume of the drum.

(a)m³ [3]

(b) A rod is stored in the drum diagonally, as shown.



Not to scale

Does a rod of length 1.4 m fit inside the drum?
Show a calculation to justify your answer.

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..... [4]

TURN OVER FOR QUESTION 13

13 Ian runs in a marathon to raise money for charity.
He takes 3 hours and 45 minutes to complete the distance of 42.195 km.

Calculate his average speed.

..... km/h [3]



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