Candidate Forename		Candidate Surname	

Centre Number						Candidate Number				

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

B277B

MATHEMATICS C (GRADUATED ASSESSMENT)

MODULE M7 – SECTION B

MONDAY 21 JUNE 2010: Afternoon
DURATION: 30 minutes

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

Candidates answer on the Question Paper

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Geometrical instruments
Tracing paper (optional)
Scientific or graphical calculator

READ INSTRUCTIONS OVERLEAF

DC (KN/DJ) MEP60058 27432/1

INSTRUCTIONS TO CANDIDATES

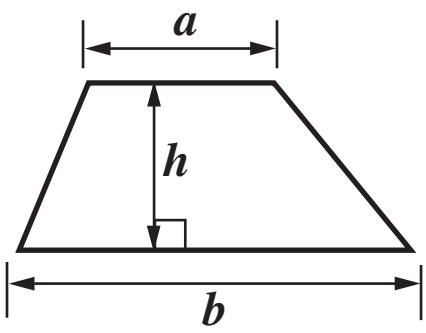
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **Show your working. Marks may be given for a correct method even if the answer is incorrect.**
- **Answer ALL the questions.**
- **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

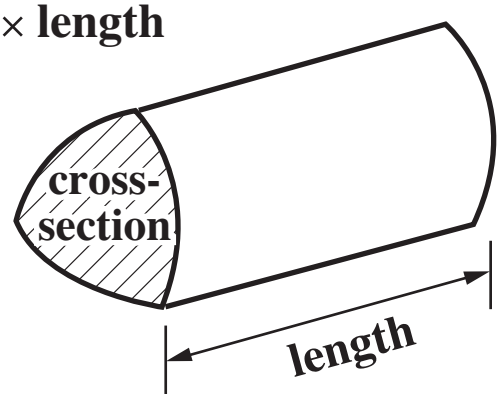
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Section B starts with question 9.**
- **You are expected to use a calculator in Section B of this paper.**
- **Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.**
- **The total number of marks for this Section is 25.**

FORMULAE SHEET

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



Volume of prism = (area of cross-section) × length



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9 **Hugo makes pink paint by mixing red paint and white paint in the ratio 1 : 8.**
Hugo makes 31·5 litres of pink paint altogether.

How much red paint and how much white paint does he use?
[2 marks]

red _____ litres

white _____ litres

10 (a) Solve.

$5(4x - 7) = 50$

[3 marks]

(a) _____

(b) Expand.

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

[2 marks]

(b) _____

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

$y = 3x - 5$

[2 marks]

(c) _____

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

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

(a) Calculate an estimate of the mean weight of these athletes.
[4 marks]

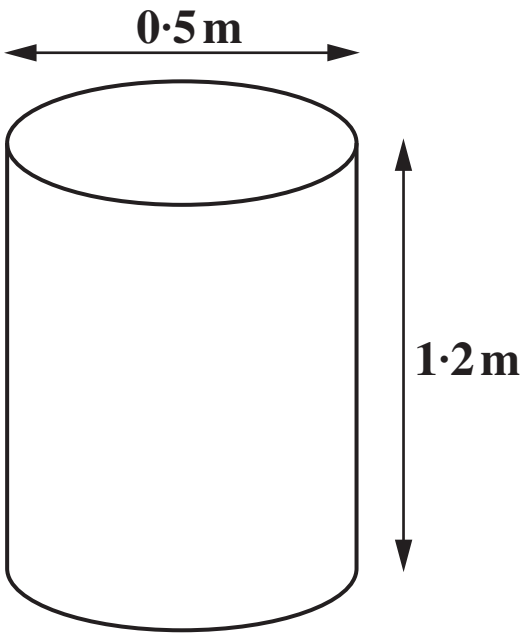
(a) _____ kg

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

What is the probability that this athlete weighs <u>OVER</u> 70 kg?
[2 marks]

(b) _____

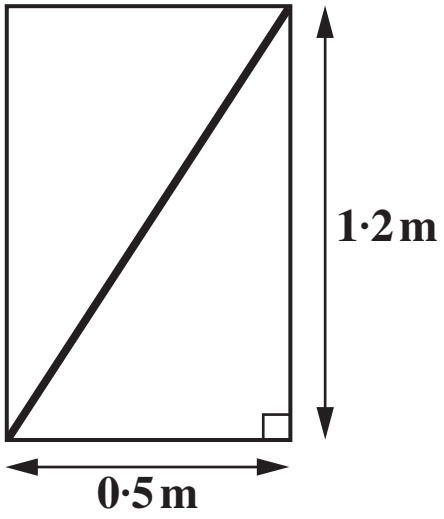
12 A cylindrical drum is shown below.
Its diameter is 0·5 m.
Its height is 1·2 m.



(a) Calculate the volume of the drum.
[3 marks]

(a) _____ m^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.
[4 marks]

TURN OVER FOR QUESTION 13

13 Ian takes part 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.
[3 marks]

_____ **km/h**