

Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

B277B

**MATHEMATICS C
(GRADUATED ASSESSMENT)**

MODULE M7 – SECTION B

THURSDAY 21 JANUARY 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

INSTRUCTIONS TO CANDIDATES

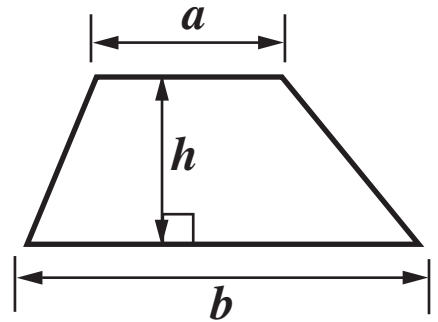
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **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, however additional paper may be used if necessary.**

INFORMATION FOR CANDIDATES

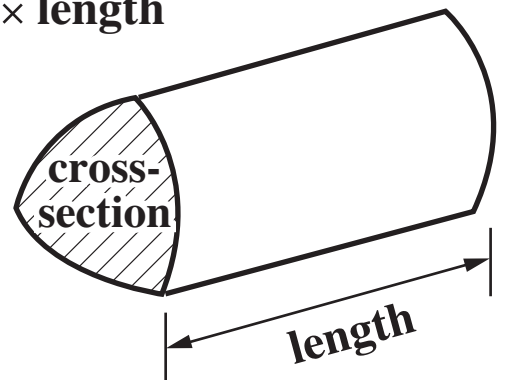
- **The number of marks is given in brackets [] at the end of each question or part question.**
- **Section B starts with question 10.**
- **You are expected to use a calculator in Section B of this paper.**
- **Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.**
- **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) \times length



10 (a) Solve.

$$3(2x + 7) = 15$$

[3 marks]

(a) _____

(b) Expand.

$$(x + 5)(x - 3)$$

[2 marks]

(b) _____

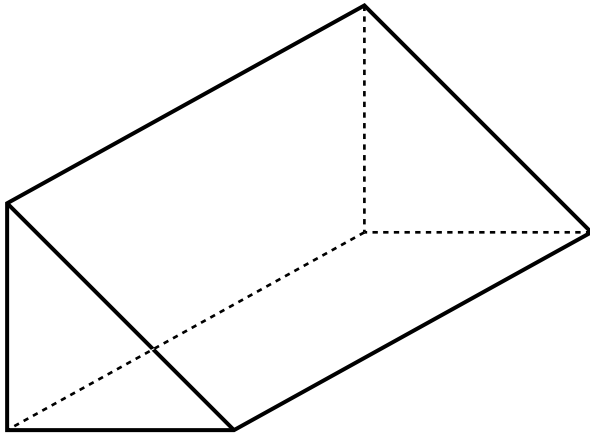
11 Holders of a leisure card can visit various attractions at a reduced price.

Complete this table.

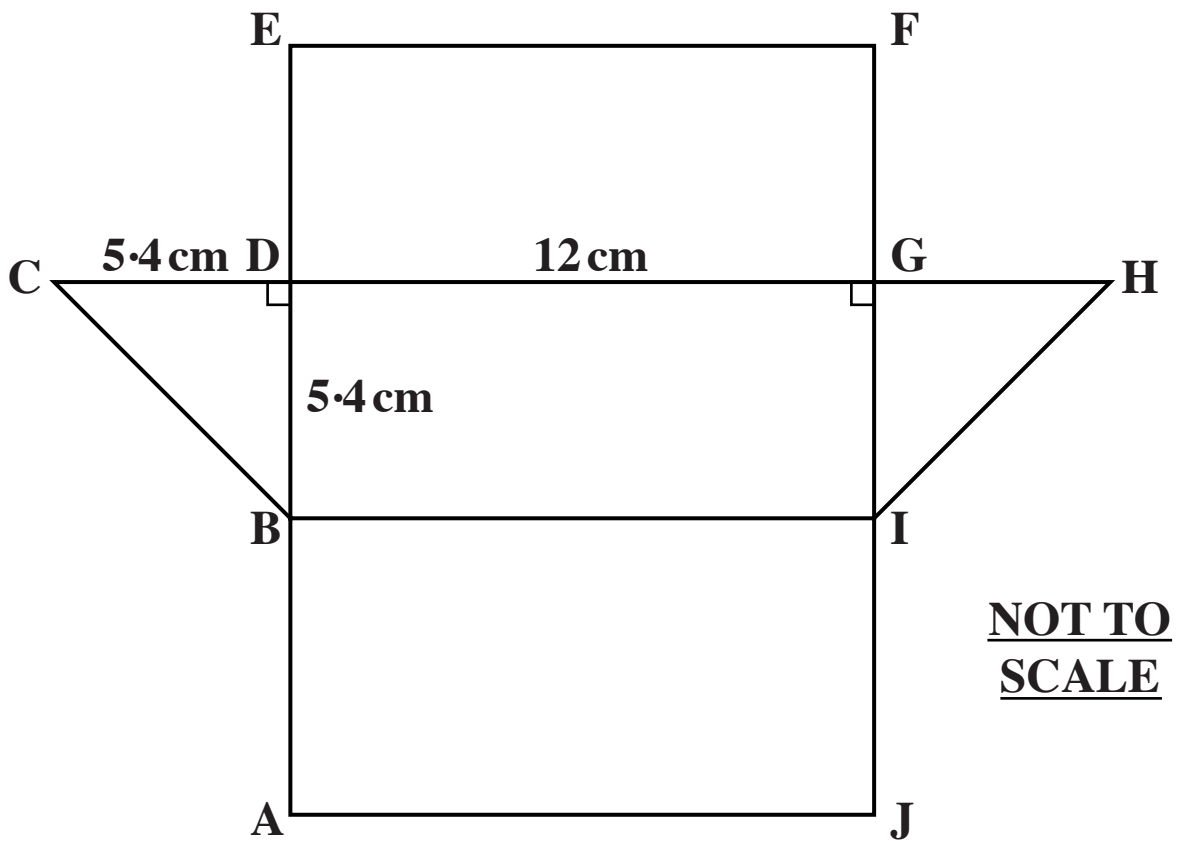
[6 marks]

	Normal price	Reduced price	Percentage saving
Toy museum	£5.50	£4.40	20%
River cruise	£8.00	£ _____	35%
City tour	£6.00	£5.25	_____ %

- 12 This container is a prism.
The cross-section is a right-angled isosceles triangle.



This is a sketch of the net of the container.
 $CD = 5.4 \text{ cm}$, $DB = 5.4 \text{ cm}$ and $DG = 12 \text{ cm}$.



(a) Calculate the length BC.
[3 marks]

(a) _____ **cm**

(b) Calculate the volume of the container.
[3 marks]

(b) _____ **cm³**

- 13** A clinic keeps a record of how long patients have to wait before they are treated.
These are the results for **75** patients.

Time in minutes	Frequency
Less than 10 minutes	15
10 to 20 minutes	35
More than 20 minutes	25

- (a)** What is the probability that a patient, chosen at random, will wait more than 20 minutes?
[1 mark]

(a) _____

(b) One day 30 patients go to the clinic.

How many would you expect to have to wait for more than 20 minutes?

[2 marks]

(b) _____

14 Eighty motorists were asked to estimate the distance they each drive in a year.

The results are summarised in the table.

Distance in miles (m thousands)	Frequency
$0 < m \leq 5$	16
$5 < m \leq 10$	38
$10 < m \leq 15$	18
$15 < m \leq 20$	6
$20 < m \leq 25$	2

**(a) Calculate an estimate of the MEAN distance.
[4 marks]**

(a) _____ thousand miles

(b) Explain how you can use the table to justify this statement.

The median distance is in the interval $5 < m \leq 10$.

[1 mark]



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