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

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

DC (KN/CGW) MEP10107 23561/1

INSTRUCTIONS TO CANDIDATES

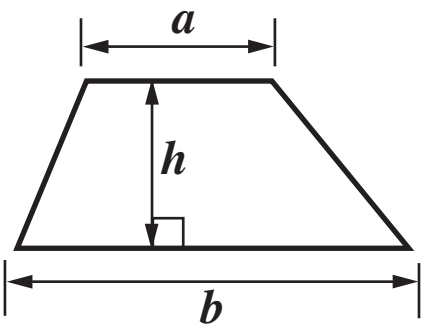
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**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

INFORMATION FOR CANDIDATES

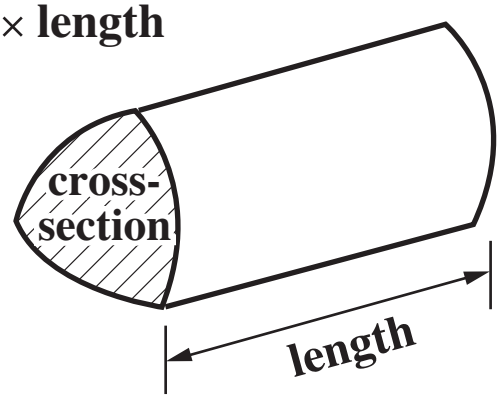
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Section B starts with question 10.**
- **You are expected to use a calculator in Section B of this paper.**
- **Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.**
- **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) × length



10 (a) Solve.

$3(2x + 7) = 15$
[3 marks]

(a) _____

(b) Expand.

$(x + 5)(x - 3)$
[2 marks]

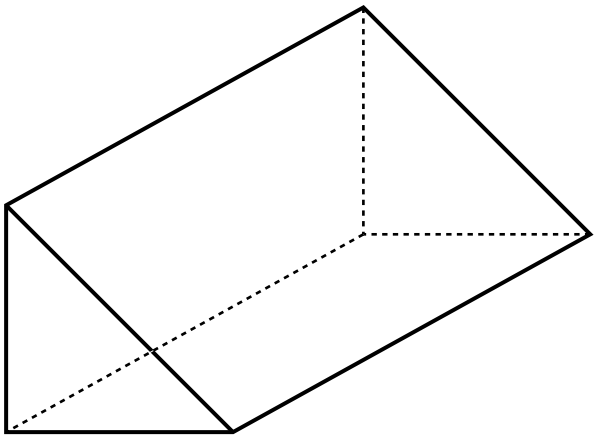
(b) _____

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

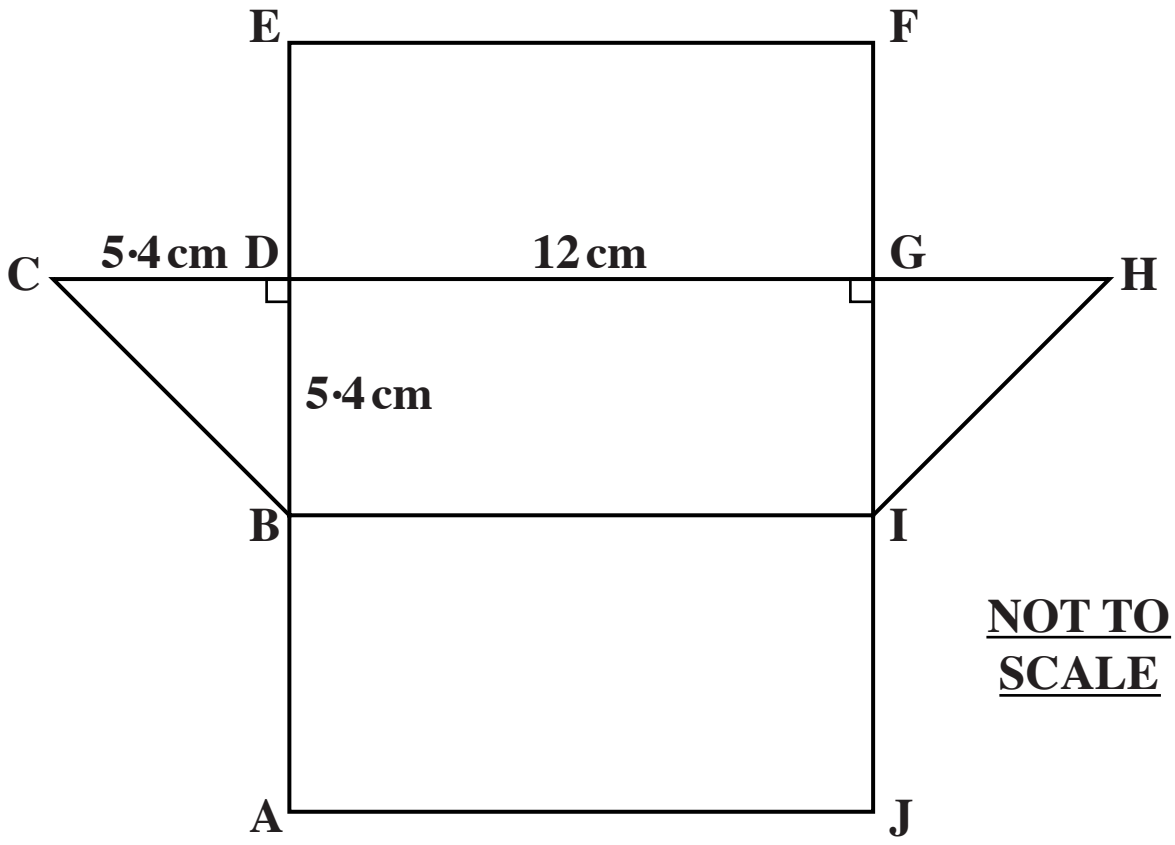
Complete this table.
[6 marks]

	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 cm, DB = 5·4 cm and DG = 12 cm.



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

(a) _____ cm

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

(b) _____ cm^3

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
$0 < m \leqslant 5$	16
$5 < m \leqslant 10$	38
$10 < m \leqslant 15$	18
$15 < m \leqslant 20$	6
$20 < m \leqslant 25$	2

(a) Calculate an estimate of the <u>MEAN</u> 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 $5 < m \leqslant 10$.

_____

_____

[1 mark]