

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
MODULE M3 (SECTION B)

**B273B**

Candidates answer on the Question Paper

**OCR Supplied Materials:**  
None

**Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)
- Electronic 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**

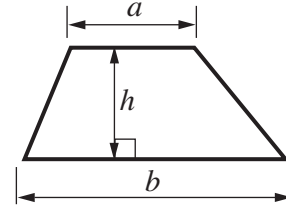
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working.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

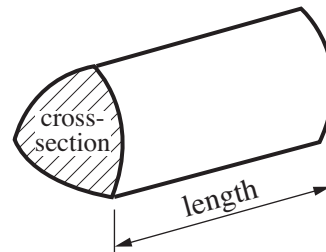
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

## Formulae Sheet

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



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



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8 (a)

centimetres	metres	kilometres
grams	kilograms	
seconds	minutes	hours

Choose the most suitable unit from the list above to complete each sentence.

The train journey from London to Leeds takes  $2\frac{1}{2}$  .....

The distance from London to Leeds is 285 .....

My suitcase weighs 8 ..... [3]

(b) A carton contains 250 millilitres of apple juice.

What fraction of a litre is this?

(b) .....litre [1]

(c) Another carton contains 1.5 litres of milk.

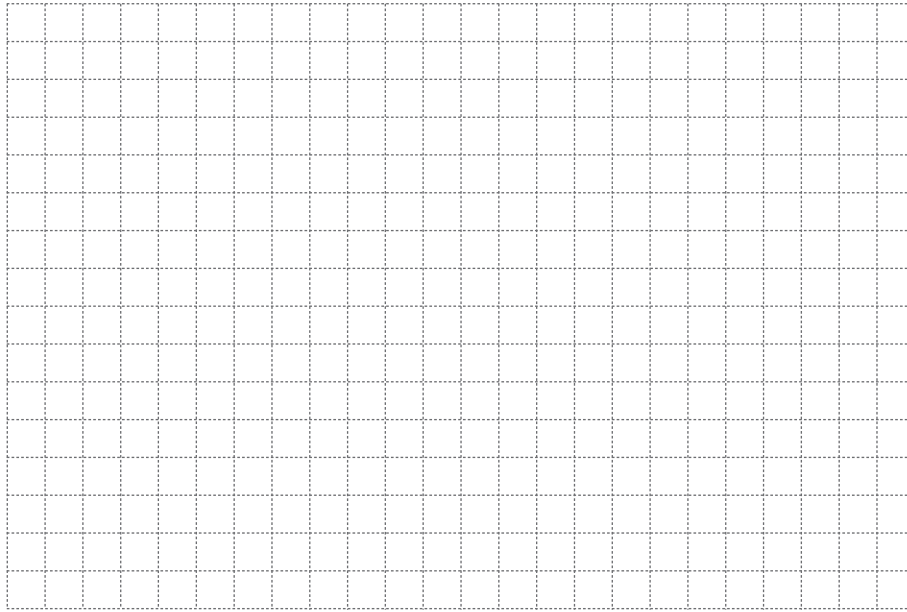
Convert 1.5 litres to millilitres.

(c) .....ml [1]

- 9 (a) The students in class 9S kept a record of the number of books they each read in a term. Their results are shown in this table.

Number of books	0	1	2	3	4	5
Frequency	1	4	7	6	5	2

- (i) Draw a labelled bar chart to show this information.



[4]

- (ii) What is the mode of the number of books read?

(a)(ii) ..... [1]

- (b) Class 9S also recorded the number of books some of their teachers read that term.

Here are the results.

2 1 0 4 0 6 2 1 7 3

Work out the mean number of books read by the teachers.

(b) ..... [3]

10 Solve.

(a)  $9 + x = 20$

(a) ..... [1]

(b)  $4x = 24$

(b) ..... [1]

(c)  $x - 5 = 12$

(c) ..... [1]

11 Work out.

(a)  $1.6^2$

(a) ..... [1]

(b)  $(2.5 + 4.3) \times (3.1 - 1.6)$

(b) ..... [2]

12 (a) Martin can claim travel expenses for the distance he drives on business.  
His company uses this formula to work out how much to pay him.

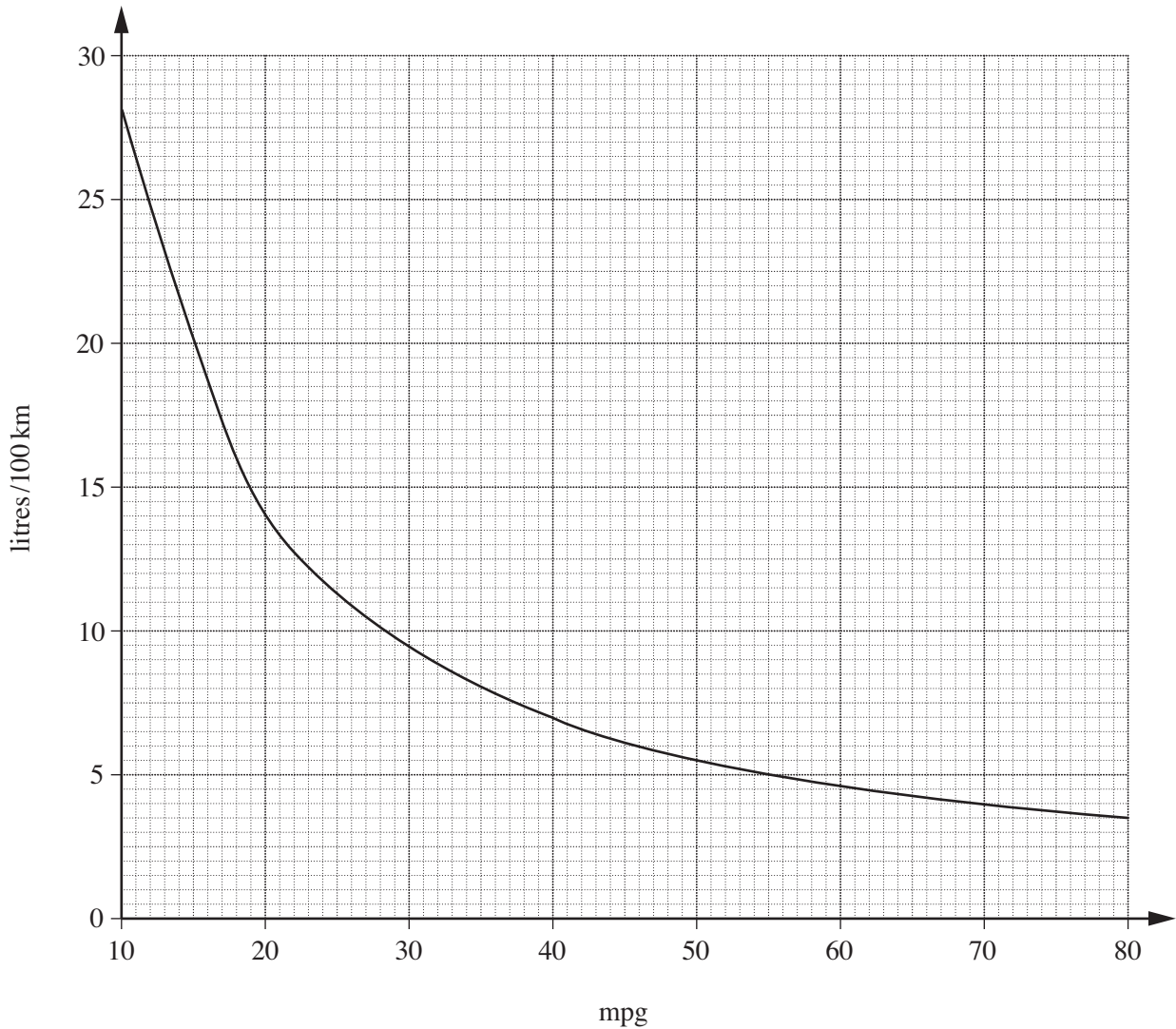
40p per mile for the first 100 miles of the journey then 30p per mile for any extra miles
--

Use the formula to work out how much Martin can claim for a journey of 150 miles.  
Give your answer in pounds.

(a) £ ..... [2]

- (b) The fuel consumption of a car can be measured in miles per gallon (mpg) and in litres per 100 km (litres/100 km).

This conversion graph can be used to convert between mpg and litres/100 km.



- (i) Rani's car has a fuel consumption of 40 mpg.

Use the graph to convert 40 mpg to litres/100 km.

(b)(i) .....litres/100 km [1]

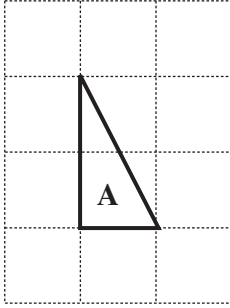
- (ii) Dave wants to buy a car that uses less than 5 litres per 100 km.

Convert 5 litres per 100 km to miles per gallon.

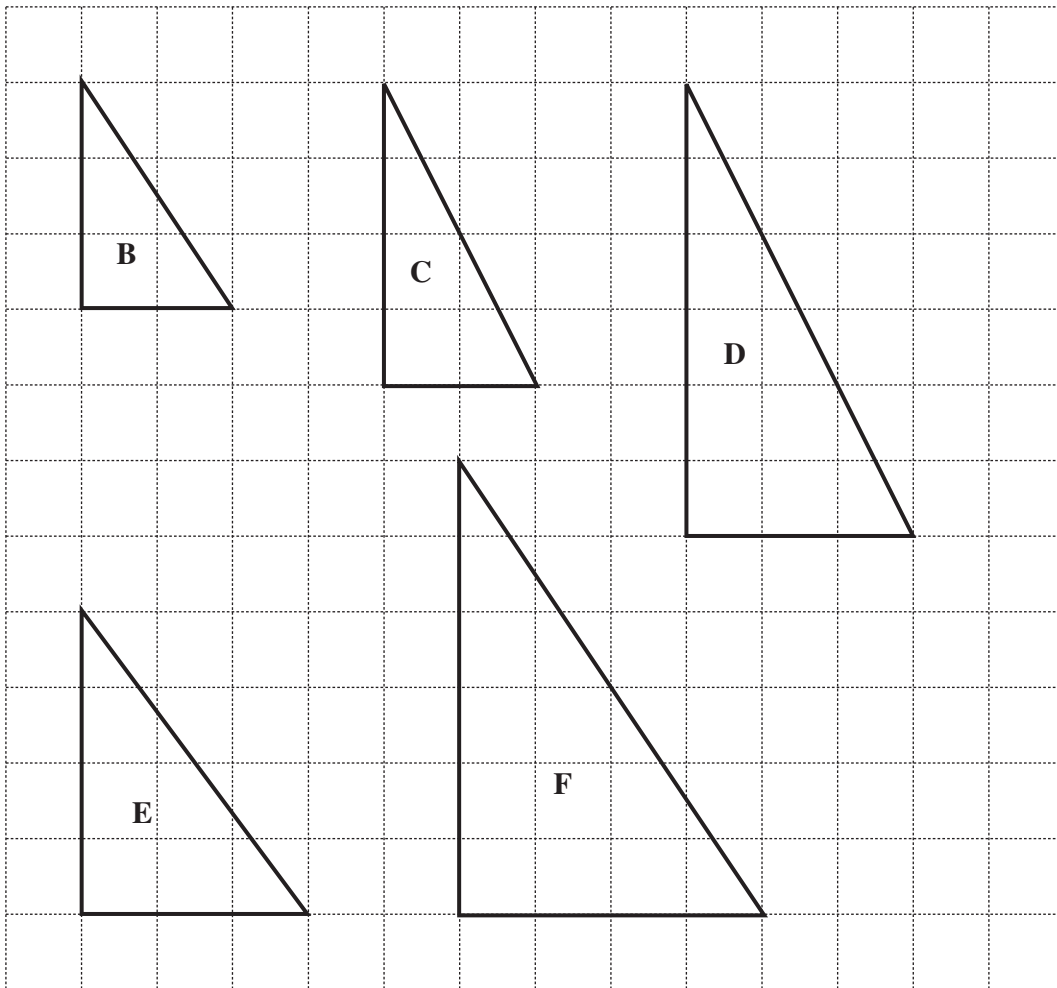
(ii) .....mpg [1]

**TURN OVER FOR QUESTION 13**

13



Two of the shapes below are enlargements of shape **A**.



Complete.

Shape ..... is an enlargement of shape **A** with scale factor 2.

Shape ..... is an enlargement of shape **A** with scale factor 3.

[2]