Surname		Other Names	
Centre Number			Candidate Number	
Candidate Signature			

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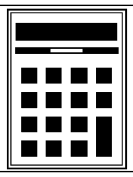
General Certificate of Secondary Education
November 2009

MATHEMATICS (MODULAR) (SPECIFICATION B) 43051/FA
Module 1 Foundation Tier Section A

F

Friday 13 November 2009 1.30 pm to 2.00 pm

For this paper you must have:
- a calculator
- mathematical instruments
- a treasury tag.



Time allowed for Section A: 30 minutes

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Section A		**Section B**	
Question	Mark	Question	Mark
1		6	
2		7	
3		8	
4		9	
5		10	
Total Section A			
Total Section B			
TOTAL			
Examiner's Initials			

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Answers written in margins will not be marked.
- Use a calculator where appropriate.
- Do all rough work in this book.
- This paper is divided into two sections: Section A and Section B.
- After the 30 minutes allowed for Section A, you must put your calculator on the floor under your seat. You will then be given Section B.
- When you have answered Section B you may work again on Section A but you may **not** use your calculator. It must remain on the floor under your seat.
- At the end of the examination tag Section A and Section B together with Section A on top.

Information

- The maximum mark for Section A is 23.
- The marks for questions are shown in brackets.
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer book.

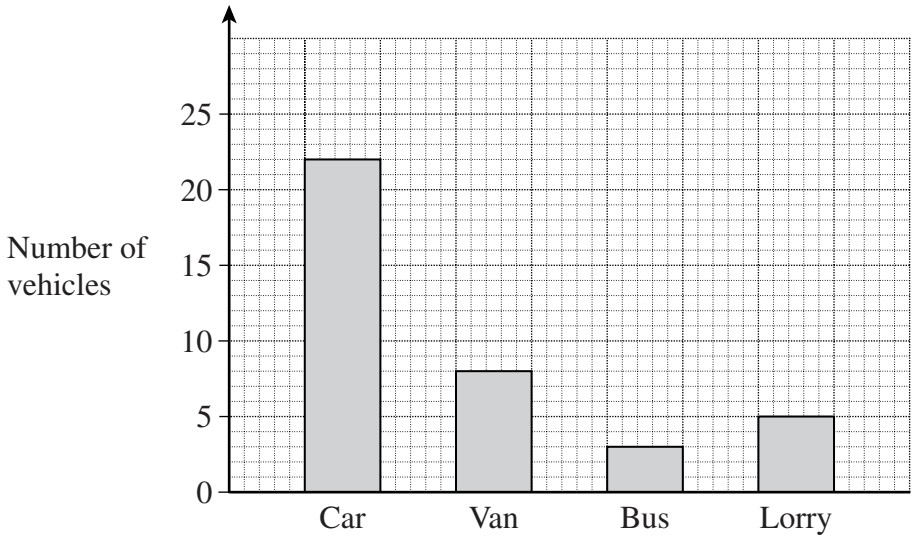
Advice

- In all calculations, show clearly how you work out your answer.

Areas outside the box will not be scanned for marking

Answer **all** questions in the spaces provided.

1 Jamie counted the number of vehicles that passed his house during one hour.
He drew a bar chart to show his results.



1 (a) Which vehicle was the least common?

Answer ..... *(1 mark)*

1 (b) How many lorries did Jamie count?

Answer ..... *(1 mark)*

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1 (c) Keann counted the number of vehicles that passed her house during the same hour. She drew a pictogram to show her results.

Key: ◯ represents 4 vehicles

Car	◯ ◯ ◯ ◯ ◗
Van	◯ ◯ ◯
Bus	◗
Lorry	◯ ◯

How many cars did Keann count?

.....

Answer ..... *(1 mark)*

1 (d) Jamie says that more vehicles pass his house than Keann's.

Based on their results, is he correct?
You **must** show your working

yes ☐ no ☐

.....

.....

.....

.....

.....

.....

(3 marks)

6

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2 A hospital manager asks 11 people how many weeks they had to wait for an operation. Here are his results.

5	4	17	14	17	15
24	11	8	17	11	

2 (a) How many people waited more than ten weeks?

Answer ..... *(1 mark)*

2 (b) Write down the mode.

.....

Answer ..... weeks *(1 mark)*

2 (c) Work out the range.

.....

Answer ..... weeks *(1 mark)*

2 (d) Calculate the mean.

.....

.....

.....

Answer ..... weeks *(3 marks)*

2 (e) The hospital manager uses the mean to show the average waiting time.

Give a reason for his choice.

.....

.....

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(1 mark)

7

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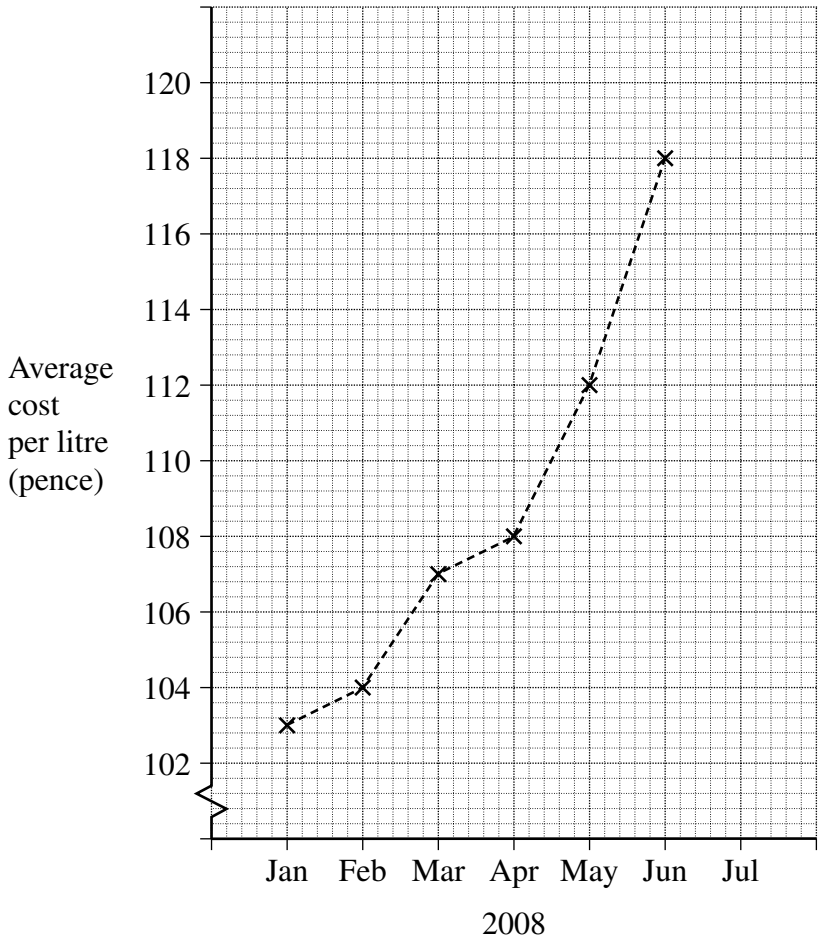
3 The time series graph shows the average cost, in pence, of one litre of unleaded petrol for the first six months of 2008.



3 (a) By how much did the average cost per litre rise from February to March?

.....

Answer ..... pence *(1 mark)*

3 (b) Between which two months was there the largest increase in average cost per litre?

.....

Answer ..... and ..... *(1 mark)*

3 (c) In July 2008 the average cost per litre fell by two pence.

Add this information to the graph.

(1 mark)

3

Turn over ▶

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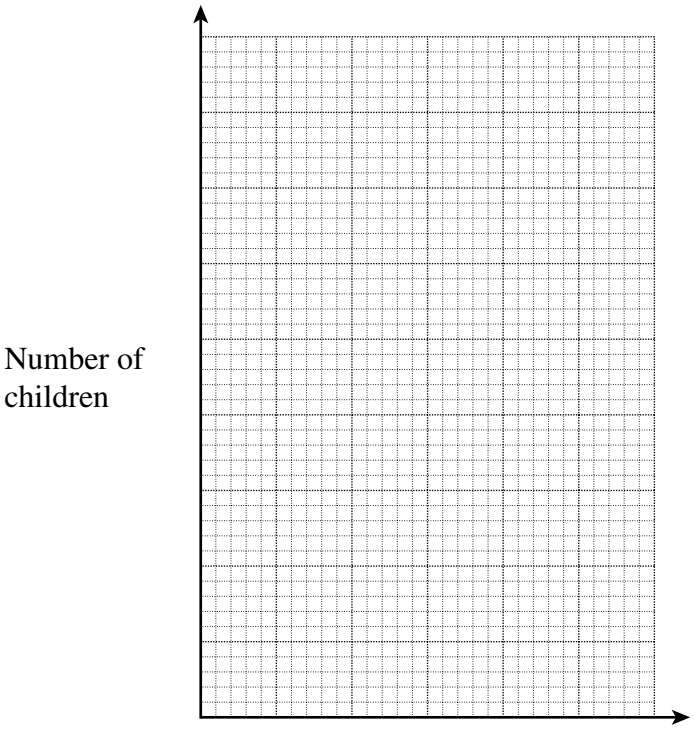
4 Fifty children were asked how long it took them to walk to school one morning. The results are shown in the table.

Time, t (minutes)	**Number of children**
$0 < t \leqslant 5$	2
$5 < t \leqslant 10$	17
$10 < t \leqslant 15$	14
$15 < t \leqslant 20$	10
$20 < t \leqslant 25$	7

Draw a frequency diagram on the grid below to show this information.



(3 marks)

3

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5 There are 500 plastic shapes in a box.
The shapes are circles, triangles, squares and rectangles.

A shape is chosen at random from the box.
The table shows some of the probabilities of shapes being chosen.

Shape	**Probability**
Circle	0.2
Triangle	
Square	
Rectangle	0.1

The probability of choosing a triangle is equal to the probability of choosing a square.

Calculate the number of triangles in the box.

.....

.....

.....

.....

Answer ..... *(4 marks)*

4

END OF SECTION A

There are no questions printed on this page

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