

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use

General Certificate of Secondary Education
March 2009



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

43051/FA

F

Tuesday 3 March 2009 1.30 pm to 2.00 pm

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments • a treasury tag. 	
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For Examiner's Use			
Section A		Section B	
Question	Mark	Question	Mark
1		6	
2		7	
3		8	
4		9	
5		10	
		11	
Total Section A			
Total Section B			
TOTAL			
Examiner's Initials			

Time allowed for Section A: 30 minutes

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.



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

- 1 A school is raising money to buy sports equipment.
The pictogram shows the amount of money raised during some events.

Key:  represents £50

Coffee morning	
Concert	
Jumble sale	
Sports day	

- 1 (a) Which event raised the most money?

Answer (1 mark)

- 1 (b) How much money did the concert raise?

.....

Answer £ (1 mark)

- 1 (c) How much more money did the Jumble sale raise than the Sports day?

.....

Answer £ (1 mark)

- 1 (d) The school needs to raise £500 in total.

How much more money do they need to raise to meet their target?

.....

.....

.....

Answer £ (3 marks)



2 The speeds, in miles per hour, of 11 cars travelling on a road are shown.

31	32	21	26	32	33
32	30	24	31	27	

2 (a) Work out the median speed.

.....

Answer mph (2 marks)

2 (b) Calculate the mean speed.

.....
.....
.....

Answer mph (3 marks)

2 (c) The speed limit for this road is either 20 mph, 30 mph or 40 mph.

What do you think the speed limit is most likely to be?
Tick the correct box.

20 mph

30 mph

40 mph

Give a reason for your answer.

.....
.....
.....

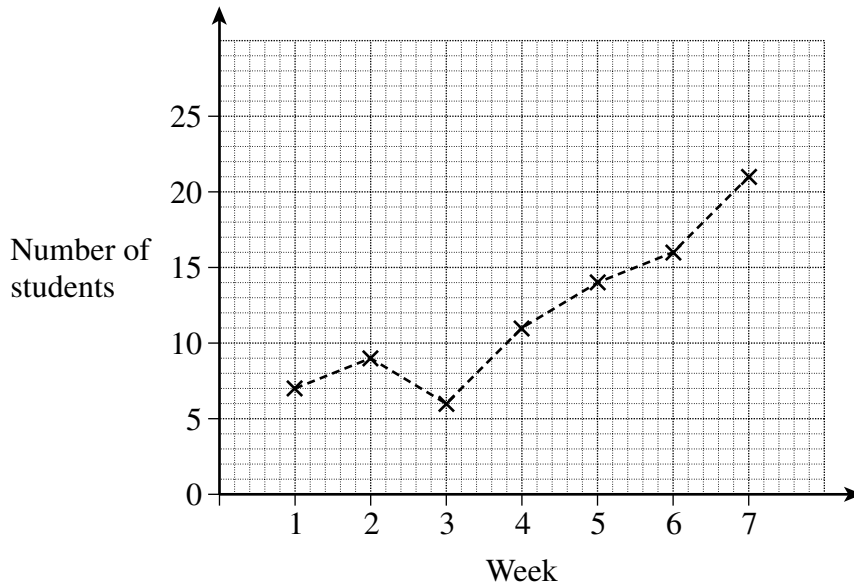
(1 mark)

6

Turn over ►



3 The time series graph shows the number of students attending mathematics revision classes over a seven-week period.



3 (a) In which week did the least number of students attend the class?

Answer (1 mark)

3 (b) How many **more** students attended in week 7 than in week 1?

.....

Answer (2 marks)

3 (c) Give a possible reason why the attendance was highest in week 7.

.....

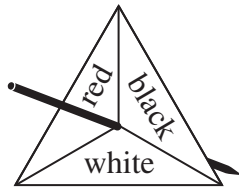
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(1 mark)

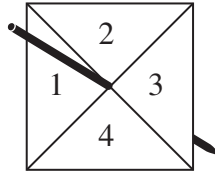


- 4 Ann has two fair spinners.

Spinner 1



Spinner 2



Ann spins both spinners and records the colour and number.
She repeats this a number of times.

- 4 (a) Design a two-way table to show the possible results.

(3 marks)

- 4 (b) Here are Ann's first five results.

black, 2 red, 2 red, 4 white, 1 black, 2

Put tallies in your table to show Ann's first five results.

(1 mark)

4

Turn over ►



- 5 There are 600 marbles of different colours in a bag.
One marble is chosen at random.
The probabilities of choosing some of the colours are shown in the table.

Colour	red	yellow	blue	black	white
Probability	0.3		0.25	0.15	0.1

Work out the number of yellow marbles in the bag.

.....

.....

.....

.....

Answer (3 marks)

3

END OF SECTION A



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General Certificate of Secondary Education
March 2009



MATHEMATICS (MODULAR) (SPECIFICATION B)
Module 1 Foundation Tier Section B

43051/FB

F

Tuesday 3 March 2009 2.05 pm to 2.35 pm

<p>For this paper you must have:</p> <ul style="list-style-type: none"> mathematical instruments. <p>You must not use a calculator.</p>	
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Time allowed for Section B: 30 minutes

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.
- Do all rough work in this book.
- You may **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
- 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 B 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 booklet.

Advice

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



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

- 6** Monan asks some friends to choose their favourite sport from a list.
Here are the results.

rugby	football	football	cricket	rugby
football	rugby	cricket	basketball	cricket
rugby	football	football	rugby	football
cricket	football	cricket	basketball	football

- 6** (a) Complete the tally chart and frequency column to show these results.

Sport	Tally	Frequency
basketball		
cricket		
football		
rugby		

(2 marks)

- 6** (b) Which sport is the mode?

Answer

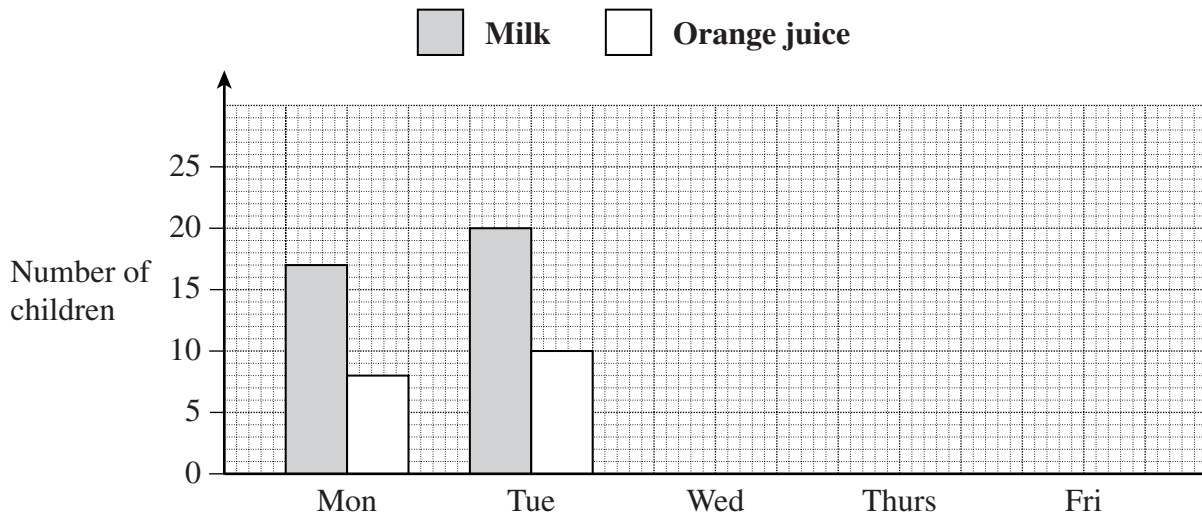
(1 mark)



7 Children at a playgroup choose either milk or orange juice each lunchtime. The table shows the choices for one week.

	Milk	Orange juice
Monday	17	8
Tuesday	20	10
Wednesday	10	16
Thursday	15	12
Friday	14	11

7 (a) Complete the dual bar chart to show this information.



(3 marks)

7 (b) Kieran says that milk is always more popular than orange juice.

Is he correct?

Give a reason for your answer.

.....

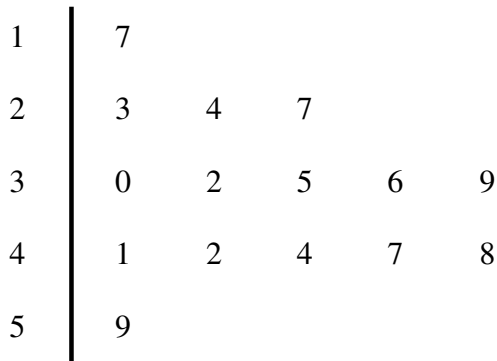
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(1 mark)



- 8** The times, in seconds, taken for 15 Year 9 pupils to complete a puzzle are shown in the stem-and-leaf diagram.

Key: 2 | 7 represents 27 seconds



- 8** (a) How many students completed the puzzle in less than 40 seconds?

.....

Answer (1 mark)

- 8** (b) Work out the range.

.....

Answer seconds (1 mark)

- 8** (c) Find the median.

.....

Answer seconds (1 mark)



- 8 (d) A group of Year 7 students completed the same puzzle.
The stem-and-leaf diagram shows their results.

Key: 2 | 7 represents 27 seconds

2	7	8				
3	2	3	5	9		
4	0	1	4	5	8	
5	0	2	3	6		

A teacher says that on average the Year 7 pupils took longer to complete the puzzle.

Is she correct?

Give a reason for your answer.

.....

.....

(2 marks)

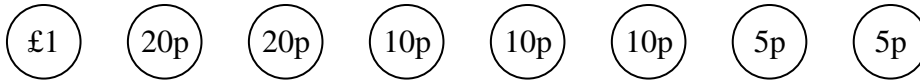
5

Turn over for the next question

Turn over ►



9 Jade has the following coins in her pocket.



9 (a) Jade takes a coin out of her pocket at random.
Each coin has an equally likely chance of being taken.

9 (a) (i) Which value of coin is least likely to be taken?

Answer (1 mark)

9 (a) (ii) Which **two** values of coin have the same chance of being taken?

Answer and (1 mark)

9 (b) Jade then takes a second coin out of her pocket at random.
This coin has a different value to the first coin.

List the six different pairs of coins Jade could have taken.

.....

.....

.....

.....

.....

.....

(2 marks)

4



10 Jason is carrying out a survey about how much exercise pupils in his school do.

10 (a) One of his questions is

“How many days a week do you exercise for 30 minutes or more?”

Design a response section for Jason’s question.

(2 marks)

10 (b) Give **one** reason why Jason may **not** want to ask every pupil in the school.

.....
.....

(1 mark)

10 (c) Jason asks a group of Year 11 girls.

Give **one** disadvantage of his choice of sample.

.....
.....

(1 mark)

Turn over for the next question

4

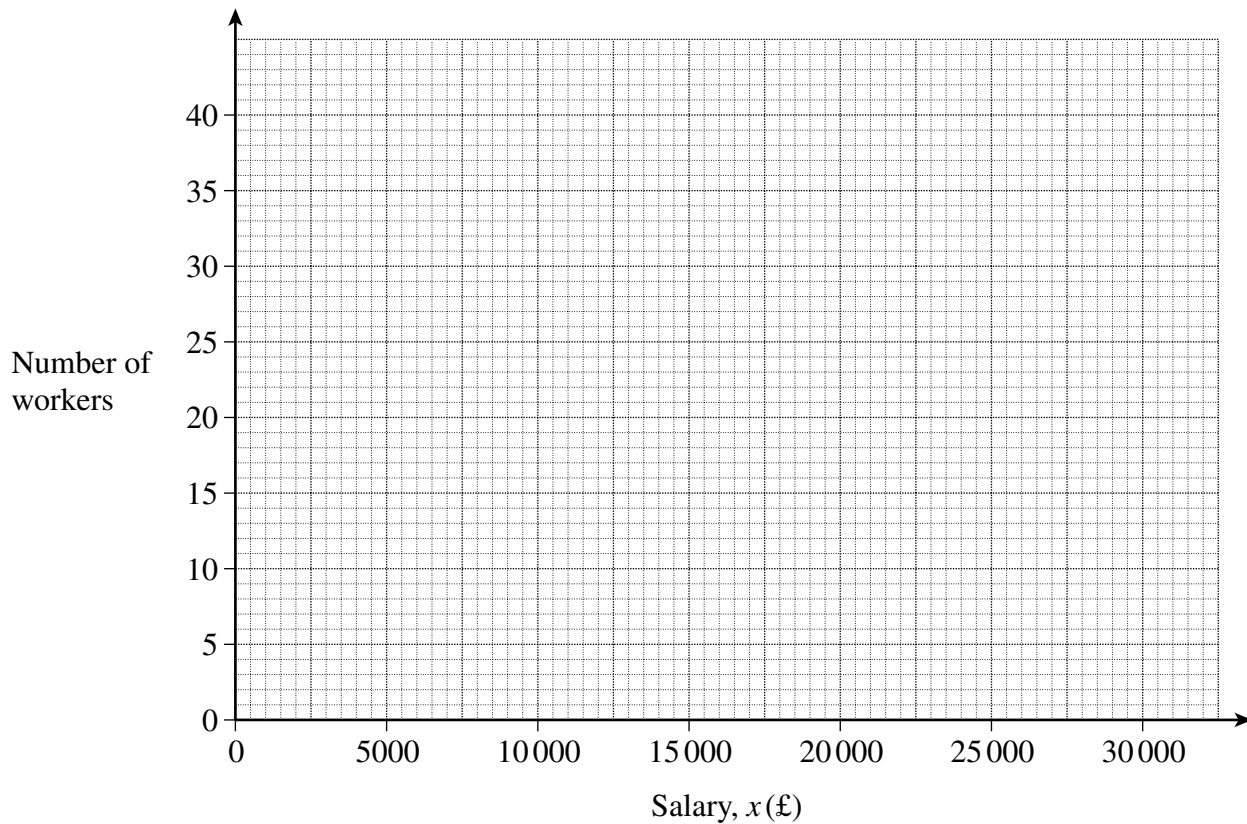
Turn over ►



11 The table shows the annual salaries of 100 office workers.

Salary, x (£)	Number of workers
$5000 < x \leq 10\,000$	14
$10\,000 < x \leq 15\,000$	39
$15\,000 < x \leq 20\,000$	26
$20\,000 < x \leq 25\,000$	18
$25\,000 < x \leq 30\,000$	3

11 (a) Draw a frequency polygon to represent this data.



(2 marks)

11 (b) One office worker is chosen at random.

Work out the probability that this office worker earns more than £20 000.

.....

Answer (1 mark)

END OF QUESTIONS

