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For Examiner's Use
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General Certificate of Secondary Education  
March 2009



**MATHEMATICS (MODULAR) (SPECIFICATION B)  
Module 3 Foundation Tier Section A**

**43053/FA**  
**F**

Tuesday 3 March 2009 9.00 am to 9.45 am

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

Time allowed for Section A: 45 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 or on blank pages 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 45 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 35.
- The marks for questions are shown in brackets.
- You may ask for more answer paper. This must be tagged securely to this answer book.

**Advice**

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



M A R 0 9 4 3 0 5 3 F A 0 1

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

**1** Circle each correct answer.

**1** (a) Which number is ten million in figures?

1 000 000

100 000

10 000 000

1000

(1 mark)

**1** (b) Which fraction is equal to 0.25?

$\frac{1}{25}$

$\frac{1}{4}$

$\frac{2}{5}$

$\frac{3}{4}$

(1 mark)

**1** (c) What is the place value of 9 in 56978?

hundreds

thousands

units

tens

(1 mark)

**1** (d) Which number is a multiple of 6?

15

16

18

26

27

(1 mark)

**1** (e) Which number is a square number?

15

16

18

26

27

(1 mark)



- 2 The table shows the cost of some items on the internet.  
It also shows some of the postage and packing costs.  
The total cost is the item cost plus the postage and packing cost.

Item	Item Cost (£)	Postage and Packing Cost (£)	Total Cost (£)
Book	14.49	1.97	
DVD	9.99		10.94
Teddy Bear	12.50	2.08	

- 2 (a) Work out the total cost for the book.

.....  
Answer £ ..... (2 marks)

- 2 (b) Work out the cost of postage and packing for the DVD.

.....  
Answer £ ..... (2 marks)

- 2 (c) Matty buys all three items.

Work out the total cost for all three items including postage and packing.

.....  
.....  
.....  
Answer £ ..... (3 marks)

- 2 (d) Georgina buys the same three items from a different supplier.  
She pays £10 for postage and packing.  
The item cost of the book and the DVD were both the same as shown in the table above.  
The teddy bear was 30% more expensive.

How much more does Georgina pay than Matty?

.....  
.....  
.....  
Answer £ ..... (4 marks)



3 (a) Work out  $-10 + 8$

.....

Answer ..... (1 mark)

3 (b) The temperature in Moscow at 6 pm was  $-20^{\circ}\text{C}$ .  
The temperature at midnight was  $15^{\circ}\text{C}$  lower.

Work out the temperature at midnight.

.....

Answer .....  $^{\circ}\text{C}$  (2 marks)

4 The cost of staying in a hostel is  $\pounds 13.50$  for the first day.  
The cost for each extra day is  $\pounds 10.50$

4 (a) Work out the total cost of staying in the hostel for three days.

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

Answer  $\pounds$  ..... (2 marks)

4 (b) Eli has  $\pounds 75$  to spend on accommodation.  
He says that he can afford to stay in the hostel for seven days.

Is he correct?  
You **must** show your working.

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

(3 marks)



5 Put these lengths of time in order.  
Start with the shortest length of time.

5 minutes 25 seconds

525 seconds

5.25 minutes

You **must** show your working.

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

Answer      Shortest .....

.....

..... (3 marks)

6 (a) The times taken to prepare and bake a cake are in the ratio 1 : 7  
It takes 35 minutes to bake the cake.

How long does it take to prepare the cake?

.....

Answer ..... minutes (2 marks)

6 (b) Before baking the volume of the cake is 800 cm<sup>3</sup>.  
After baking the volume of the cake is 2000 cm<sup>3</sup>.

Calculate the percentage increase in the volume of the cake.

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

Answer ..... % (3 marks)



7 You are given that 23 and 29 are prime numbers.

7 (a) Find the least common multiple (LCM) of 23 and 29.

Answer ..... (1 mark)

7 (b) (i) Write down the highest common factor (HCF) of 23 and 29.

Answer ..... (1 mark)

7 (b) (ii) Work out the highest common factor (HCF) of 46 and 58.

.....

Answer ..... (1 mark)

**END OF SECTION A**



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General Certificate of Secondary Education  
March 2009



**MATHEMATICS (MODULAR) (SPECIFICATION B)  
Module 3 Foundation Tier Section B**

**43053/FB  
F**

Tuesday 3 March 2009 9.50 am to 10.35 am

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>mathematical instruments.</li> </ul> <p>You must <b>not</b> use a calculator.</p>	
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Time allowed for Section B: 45 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 or on blank pages 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 35.
- The marks for questions are shown in brackets.
- You may ask for more answer paper. This must be tagged securely to this answer book.

**Advice**

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



M A R 0 9 4 3 0 5 3 F B 0 1

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

8 Here are four single-digit number cards.



8 (a) Use all four cards to make an even number.

Answer

(1 mark)

8 (b) Use all four cards to make the largest possible number that ends in 9.

Answer

(1 mark)

8 (c) The cards can be used for adding and subtracting.

For example

$$\boxed{3} \boxed{6} + \boxed{7} \boxed{9} = 115$$

Complete the following.

8 (c) (i)     +   = 106 (1 mark)

8 (c) (ii)   -   = 23 (1 mark)

8 (c) (iii)     -  = 964 (1 mark)

8 (d) A new set of four single-digit number cards is used.  
The numbers 6, 9, 3 and 7 are **not** in the new set.  
All the numbers in the new set are different.

What is the largest possible number that can be made?

.....

Answer

(2 marks)



9 (a) Work out  $78 \div 6$

.....  
.....

Answer ..... (1 mark)

9 (b) Work out  $364 \times 79$

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

Answer ..... (3 marks)

10 In each part, write down the number that is half way between the numbers given.

Example            4                                  6                                  8

10 (a) .....

6    .....    12

(1 mark)

10 (b) .....

11    .....    16

(1 mark)

10 (c) .....

1.7    .....    2.1

(1 mark)

10 (d) .....

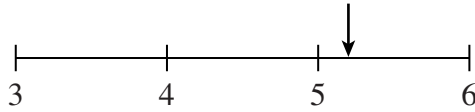
-5    .....    1

(1 mark)



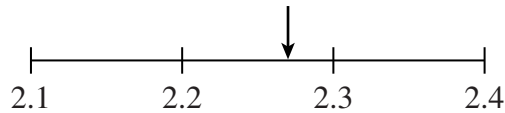
**11** Estimate the value indicated by each arrow.

**11** (a)



Answer ..... (1 mark)

**11** (b)



Answer ..... (1 mark)

**12** (a) Kelly estimates the value of  $\frac{285 \times 63}{19}$

She rounds each of the three numbers to one significant figure.  
She then works out the answer.

Show that Kelly should obtain 900 as her answer.

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

(2 marks)

**12** (b) The exact value of  $\frac{285 \times 63}{19}$  is 945.

Show that Kelly's answer of 900 is within 5% of 945.

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

(3 marks)



**13** Here is a train timetable.

Cleethorpes	0528	0628	0714	0801
Scunthorpe	0600	0700	0745	0832
Doncaster (arr)	0632	0733	0818	0908
Doncaster (dep)	0636	0738	0820	0915
Meadowhall	0701	0805		0941
Sheffield	0710	0814	0852	0950

**13** (a) How long does the 0528 train from Cleethorpes take to travel to Scunthorpe?

.....  
 Answer ..... minutes (1 mark)

**13** (b) Anna is travelling from Doncaster to Sheffield.  
 She needs to be in Sheffield by half past nine in the morning.

Which is the latest train from Doncaster she should catch?

Answer ..... (1 mark)

**13** (c) The 0714 train from Cleethorpes to Sheffield has the shortest journey time of these four trains.

Give a possible reason for this.

.....  
 .....  
 (1 mark)



**14** The stadium for the cup final holds 100 000 people.  
 One of the teams has 36 000 season ticket holders.  
 90% of these people go to the cup final.  
 The other team has 55 000 season ticket holders.  
 $\frac{4}{5}$  of these people go to the cup final.

Is the stadium more than three-quarters full with season ticket holders?  
 You **must** show your working.

.....

.....

.....

.....

.....

.....

(5 marks)

**15** (a) Work out  $\frac{3}{7} \div 8$

.....

.....

Answer ..... (2 marks)

**15** (b) Work out  $3\frac{1}{2} - 1\frac{6}{7}$

.....

.....

.....

Answer ..... (3 marks)

**END OF QUESTIONS**



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