

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
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10 – 11	
TOTAL	



General Certificate of Secondary Education
Foundation Tier
November 2013

Methods in Mathematics (Linked Pair Pilot)

93651F/B

F

Unit 1 Algebra and Probability
Section B Non-Calculator

Wednesday 6 November 2013 9.50 am to 10.35 am

<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

- 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. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- You must **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 must **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 marks for questions are shown in brackets.
- The maximum mark for this paper is 40.
- The quality of your written communication is specifically assessed in Questions 14 and 18. These questions are indicated with an asterisk (*)
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

Advice

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



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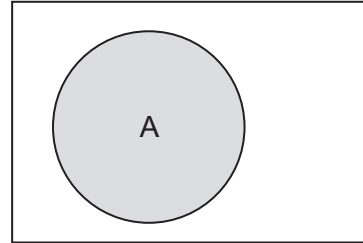
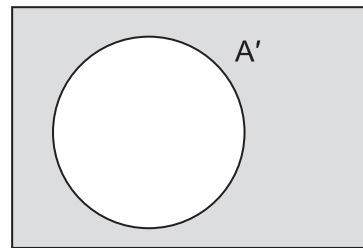
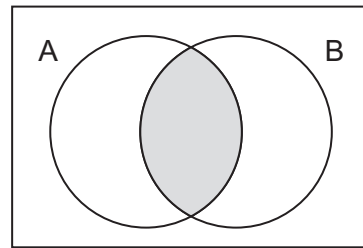
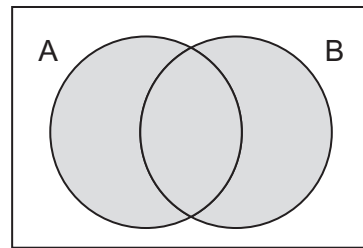
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93651F/B

Formulae Sheet: Foundation Tier

Set notation

A

 A'  $A \cap B$  $A \cup B$ 

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

14 There are 100 cars in a car park.
23 are red.

14 (a) What percentage of the cars are **not** red?

.....

Answer % (1 mark)

***14 (b)** $\frac{1}{4}$ of the cars are black.

Are there more black cars than red cars?
Tick the correct box.

Yes No Cannot tell

Give a reason for your answer.

Reason

.....

(1 mark)

14 (c) Greg says

“**Exactly** $\frac{1}{3}$ of the cars are white.”

Give a reason why Greg must be wrong.

.....

.....

(1 mark)

3

Turn over ►



15 I have five pairs of shoes.

Four pairs are black.

One pair is brown.

I pick **one** shoe at random.

Circle the word that completes the sentence correctly.

15 (a) The chance the shoe is black is

impossible

unlikely

evens

likely

certain

(1 mark)

15 (b) The chance the shoe is a left shoe is

impossible

unlikely

evens

likely

certain

(1 mark)

15 (c) The chance the shoe is red is

impossible

unlikely

evens

likely

certain

(1 mark)



16



Mary

I have 28p in 2p coins.
I also have some 5p coins.

The **total** value of **all** Mary's coins is 63p

How many coins has she got **altogether**?

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

Answer (3 marks)

17

Work out 27×68

Answer (3 marks)



*18



Chen

15% of 240 is a square number.

Is Chen correct?
Tick the correct box.

Yes

No

Show how you decide.

.....

.....

.....

.....

.....

(3 marks)



19 $H = 3f + 2g$

19 (a) Work out the value of H when $f = 9$ and $g = 7$

.....
.....

Answer (2 marks)

19 (b) Work out the value of g when $H = 68$ and $f = 20$

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

Answer (2 marks)

19 (c) Work out possible values for f and g when $H = 22$

.....
.....

$f =$

$g =$

(1 mark)



20 (a) Work out $\frac{2}{5}$ of 45

.....

Answer (2 marks)

20 (b) Work out $\frac{3}{8} \times \frac{4}{9}$

Give your answer in its simplest form.

.....

Answer (2 marks)

20 (c) Work out 0.7×0.1

.....

Answer (1 mark)



- 21 The three terms on each edge of this grid must add up to $12x$.

$3x$		
$2x$		$6x$
		x

Complete the grid.

.....

.....

.....

.....

(3 marks)

Turn over for the next question



22 (a) What is 60 out of 300 as a percentage?

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

Answer % (2 marks)

22 (b) Divide 480 in the ratio 1 : 3

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

Answer : (2 marks)

23 The sum of the whole numbers from 1 to 50 inclusive is 1275

Work out the sum of the whole numbers from 2 to 51 inclusive.

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

Answer (2 marks)



24 Work out $\frac{4}{5} \div \frac{3}{8}$

Give your answer as a mixed number.

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

Answer (3 marks)

25 Here are two expressions.

$3x - 2$

$x + 10$

The total value of the two expressions is 52

Work out the value of x .

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

$x =$ (3 marks)

END OF QUESTIONS



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

