

Centre Number						Candidate Number				
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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
January 2013

Methods in Mathematics (Linked Pair Pilot)

93651F/A

Unit 1 Algebra and Probability
Section A Calculator

F

Friday 11 January 2013 9.00 am to 9.45 am

For this paper you must have:

- a calculator
- mathematical instruments.



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.
- 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 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 21 and 22 of Section B. 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 booklet.
- You are expected to use a calculator where appropriate.

Advice

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



J A N 1 3 9 3 6 5 1 F A 0 1

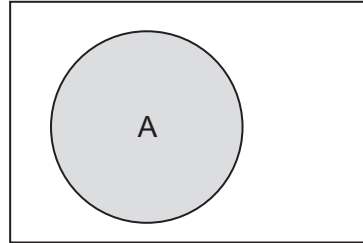
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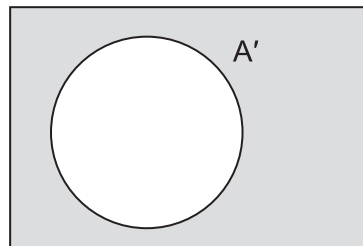
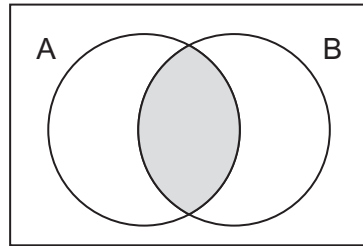
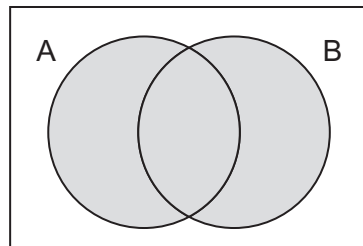
Formulae Sheet: Foundation Tier

Set notation

A



A'

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

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

1 Complete the table.

Fraction	Decimal	Percentage
$\frac{1}{4}$	0.25	
$\frac{2}{5}$		40%
	0.9	90%

(3 marks)

2 Books cost £ 3.75 each.
A student has £ 20.

What is the greatest number of books she can buy?

.....

.....

.....

Answer (2 marks)



3 (a) A bag contains 10 red pens and 10 black pens.

Circle the word that describes the chance of choosing a red pen at random.

Impossible

Unlikely

Evens

Likely

Certain

(1 mark)

3 (b) A box contains only blue pens and green pens.

The chance of choosing a blue pen at random is **unlikely**.

Tick the correct statement.

There are more blue pens

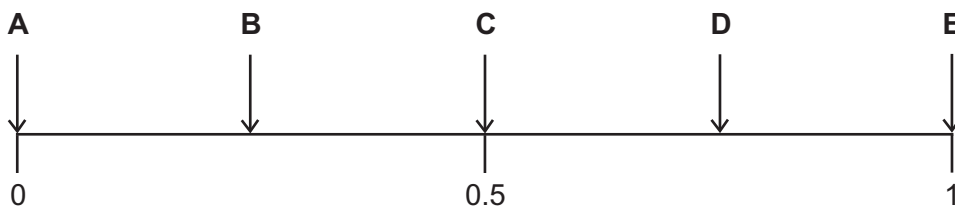
There are more green pens

There are the same number of blue pens and green pens

(1 mark)

3 (c) Here is a probability scale.

Which letter shows the probability that an event is certain?



Answer (1 mark)



4 Three positive whole numbers add up to 34.
One of the numbers is a multiple of 9.
The other two numbers are equal.

What are the three numbers?

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

Answer , , (3 marks)

5 n is a whole number.

Use one of these words to complete the sentence.

even negative odd square

$2n$ is always (1 mark)

Turn over for the next question



6 (a) Work out 60% of 35

.....
.....

Answer (2 marks)

6 (b) Work out $\frac{4}{5}$ of 150

.....
.....

Answer (2 marks)

7 A workman has 9 identical packets of screws and 4 single screws.
He has 76 screws altogether.

How many screws are in each packet?

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

Answer (3 marks)



8 Here are some instructions.

Start with a whole number

Add 3

Now divide by 4

Write down your answer

8 (a) Amy starts with the number 17.

What answer should she write down?

.....

.....

Answer (2 marks)

8 (b) Ben starts with a whole number.
His answer is bigger than 5 but less than 6.

Work out **all** the numbers he could have started with.

.....

.....

.....

.....

Answer (3 marks)

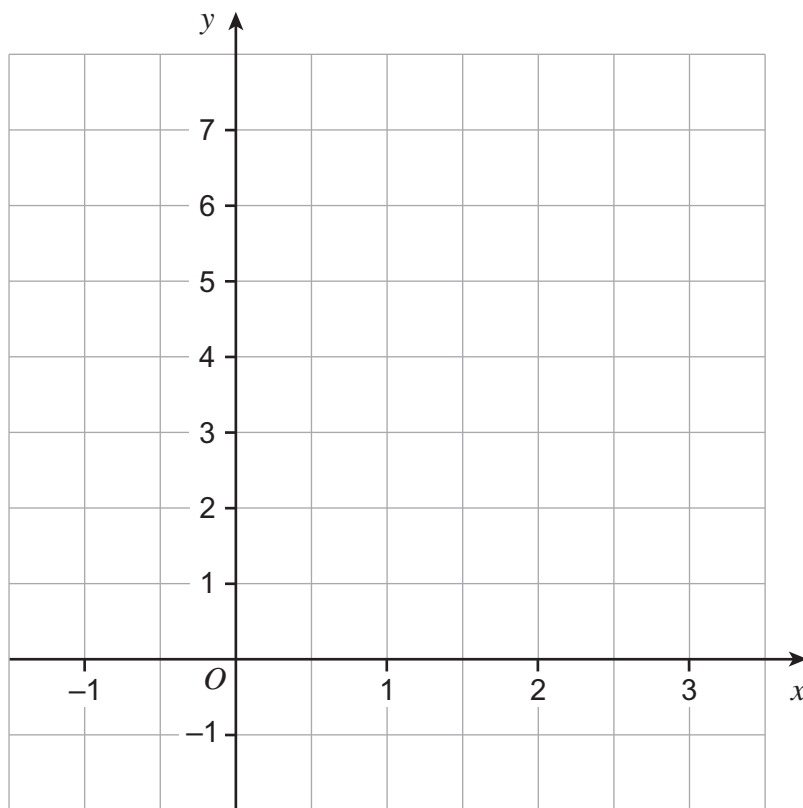


9 (a) Complete the table of values for $y = 2x + 1$

x	-1	1	3
y	-1	3	

(1 mark)

9 (b) On the grid draw the graph of $y = 2x + 1$ for values of x from -1 to 3.



(2 marks)

9 (c) On the grid draw the line $y = 5$

(1 mark)



10 (a) Simplify $8a + 5b + 3a - 2b$

Answer (2 marks)

10 (b) Multiply out $6(x + 3)$

Answer (1 mark)

Turn over for the next question



11 Sweets come in four flavours.

Flavour	Lime	Orange	Melon	Cherry
Probability	0.2	0.15	0.3	

11 (a) What is the probability that a sweet is **cherry** flavour?

.....

.....

Answer (2 marks)

11 (b) What is the probability that a sweet is **lime** or **melon** flavour?

.....

Answer (1 mark)

11 (c) There are 200 sweets altogether.
How many are **orange** flavour?

.....

.....

Answer (2 marks)



12 A water container is $\frac{1}{8}$ full.

45 litres of water are poured into the container.

The container is now $\frac{3}{4}$ full.

When the container is full, how much water does it hold?

.....

.....

.....

.....

Answer litres (4 marks)

END OF SECTION A



There are no questions printed on this page

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

