Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12	
TOTAL	

General Certificate of Secondary Education
Foundation Tier
June 2012

Mathematics 43601F

Unit 1

Tuesday 19 June 2012 1.30 pm to 2.30 pm

F

For this paper you must have:	
• a calculator • mathematical instruments.	

Time allowed
- 1 hour

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.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 54.
- The quality of your written communication is specifically assessed in Questions 1 and 8. These questions are indicated with an asterisk (*).
- 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** The pictogram shows how some people travel.

Key: ○ represents 10 people

Car	○ ○ ○ ○ ○
Bus	○ ○ ○ ◗
Bicycle	○ ○
Tram	○ ○ ◗

1 (a) How many of these people travel by car?

.....

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

1 (b) Which is used by the fewest?
Circle your answer.

Car Bus Bicycle Tram

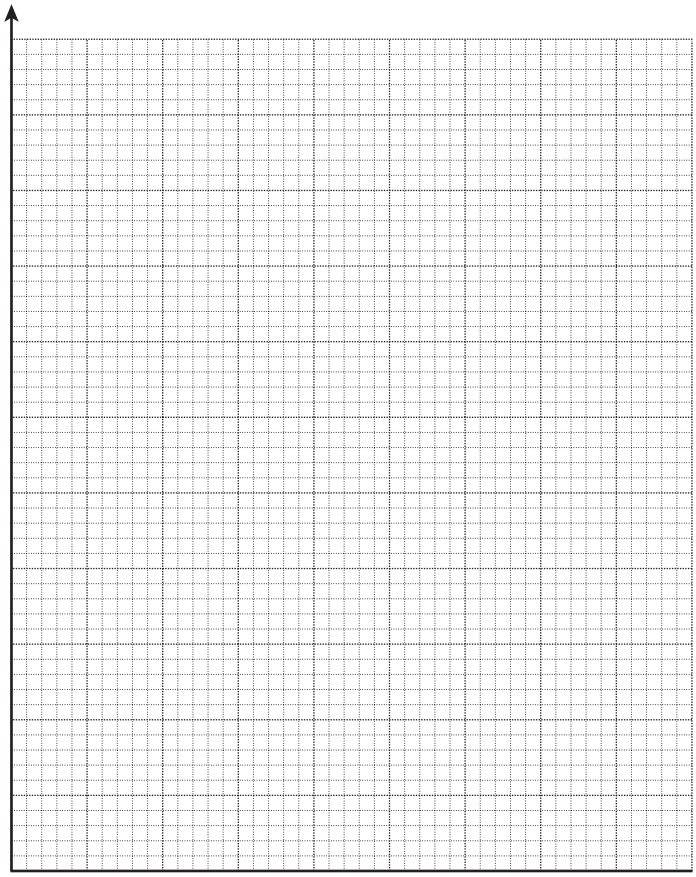
(1 mark)

1 (c) How many more people travel by bus than by tram?

.....

Answer ..... *(2 marks)*

1 (d) Show the data in a fully labelled bar chart.



(5 marks)

Turn over for the next question

9

2 Here are six numbers.

14 14 15 18 21 24

2 (a) Why is 14 the mode?

.....

(1 mark)

2 (b) Each number is doubled.

What is the new mode?

.....

.....

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

2 (c) Here are the six numbers again.

14 14 15 18 21 24

Round each number to the nearest 10.

What is the mode now?

.....

.....

Answer ..... *(2 marks)*

3 (a) Use a suitable word from the list to complete each sentence.

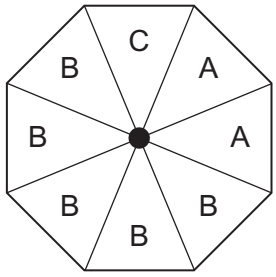
impossible unlikely evens likely certain

Rolling a 7 on a fair ordinary dice is .....

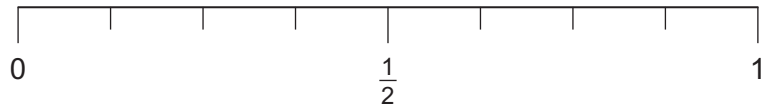
Rolling a 6 on a fair ordinary dice is .....

(2 marks)

3 (b) A fair spinner has eight equal sections.



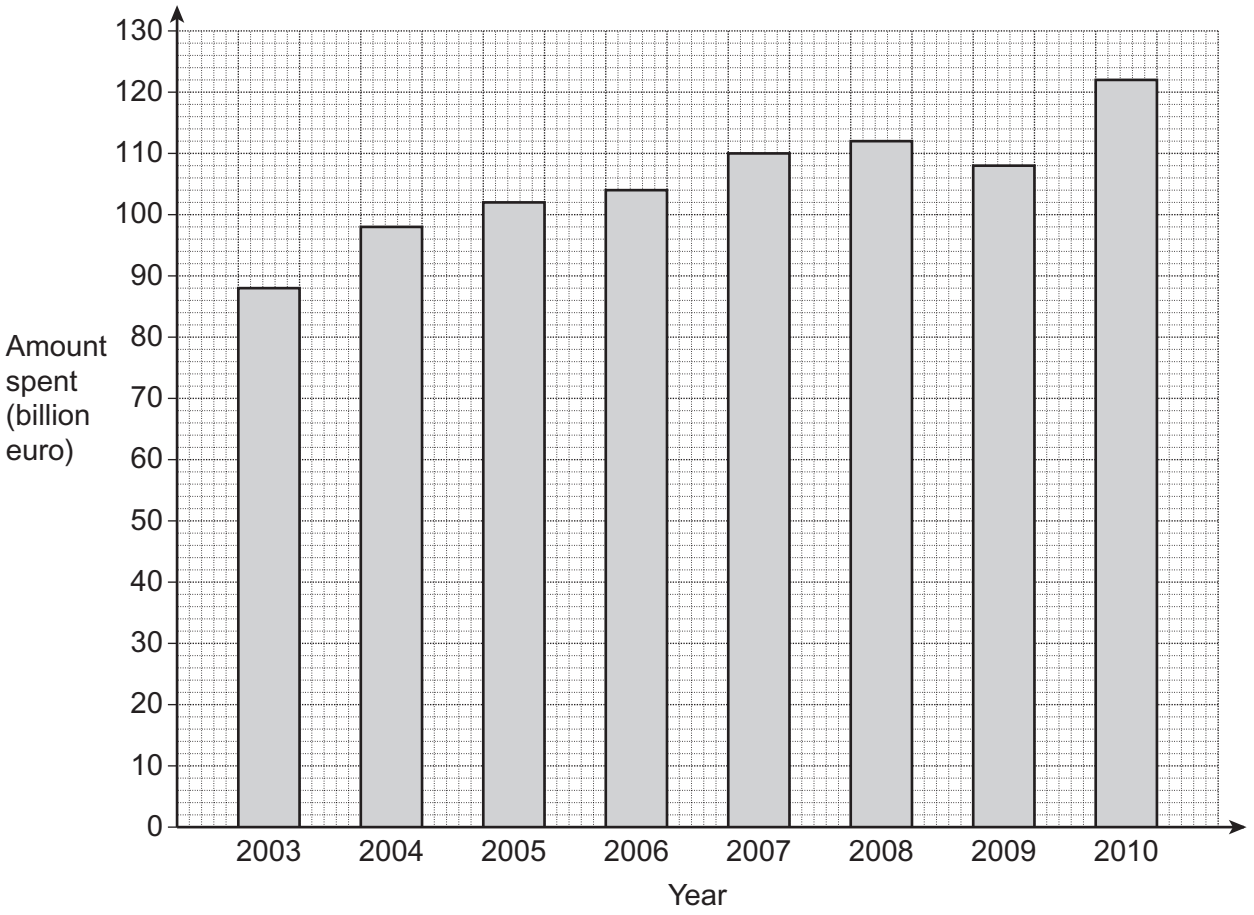
Put arrows on the scale to show the probability of landing on each letter.
Label each arrow with the correct letter.



(3 marks)

9

4 The graph shows the amount spent by the European Union.



4 (a) Which of these years was the first that over 100 billion euro was spent?

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

4 (b) In which year did the amount spent fall?

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

4 (c) $\frac{9}{20}$ of the amount spent in 2007 was on farming.

How much was spent in 2007 on farming?

.....

.....

.....

Answer ..... billion euro *(3 marks)*

5 Use your calculator to change $\frac{27}{64}$ to a decimal.

5 (a) Write down your full calculator display.

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

5 (b) Give your answer to 3 decimal places.

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

6 The stem-and-leaf diagram shows the number of visitors to a castle over 15 days.

Key: 7 | 0 represents 70 visitors

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

6 (a) How many days had more than 80 visitors?

.....

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

6 (b) Work out the range.

.....

Answer ..... *(2 marks)*

10

7 In a game players score points.
The table shows the number of points Alex scored in 50 games.

Number of points	Number of games
0	13
1	8
2	6
3	8
4	15
	Total = 50

7 (a) In what fraction of the 50 games did Alex score 4 points?
Give your answer in its simplest form.

.....

Answer ..... *(2 marks)*

7 (b) Alex says he scored **more** than 100 points in total.

Show that he is correct.

.....

.....

.....

.....

.....

(3 marks)

8 (a) The number of cakes sold in a shop on 5 days is shown.

Day	Mon	Tue	Wed	Thu	Fri
Number of cakes sold	44	38	48	55	60

Work out the mean number of cakes sold.

.....

.....

.....

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

***8 (b)** On Saturday the shop had 60 cakes to sell.
41 cakes were sold.

The profit on each cake sold is 40 p.
The loss on each cake **not** sold is 10 p.

Work out the overall profit for these 60 cakes.

.....

.....

.....

.....

.....

.....

Answer £ ..... *(4 marks)*

12

Turn over ▶

9 A new road is planned.
There are two possible routes, A and B.

200 people are asked which route they prefer.

9 (a) Name a suitable data collection method to use.

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

9 (b) Write a suitable question with a response section.

Question .....

.....

Response Section

(2 marks)

9 (c) 27% of the 200 people prefer route A.

How many people is this?

.....

.....

.....

.....

Answer ..... *(2 marks)*

10 The probability that Kate oversleeps is four times the probability that she does **not**.

Work out the probability that she oversleeps.

.....

.....

Answer ..... *(2 marks)*

11 A grocer has 100 boxes of strawberries.

He weighs 10 of the boxes.

Which **three** words describe the data he collects?
Circle your answers.

continuous discrete sample primary secondary

(2 marks)

12 A toy is made from red bricks and yellow bricks.

Number of red bricks : number of yellow bricks = 5 : 2
There are 210 **more** red bricks than yellow bricks.

How many red bricks are in the toy?

.....

.....

.....

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

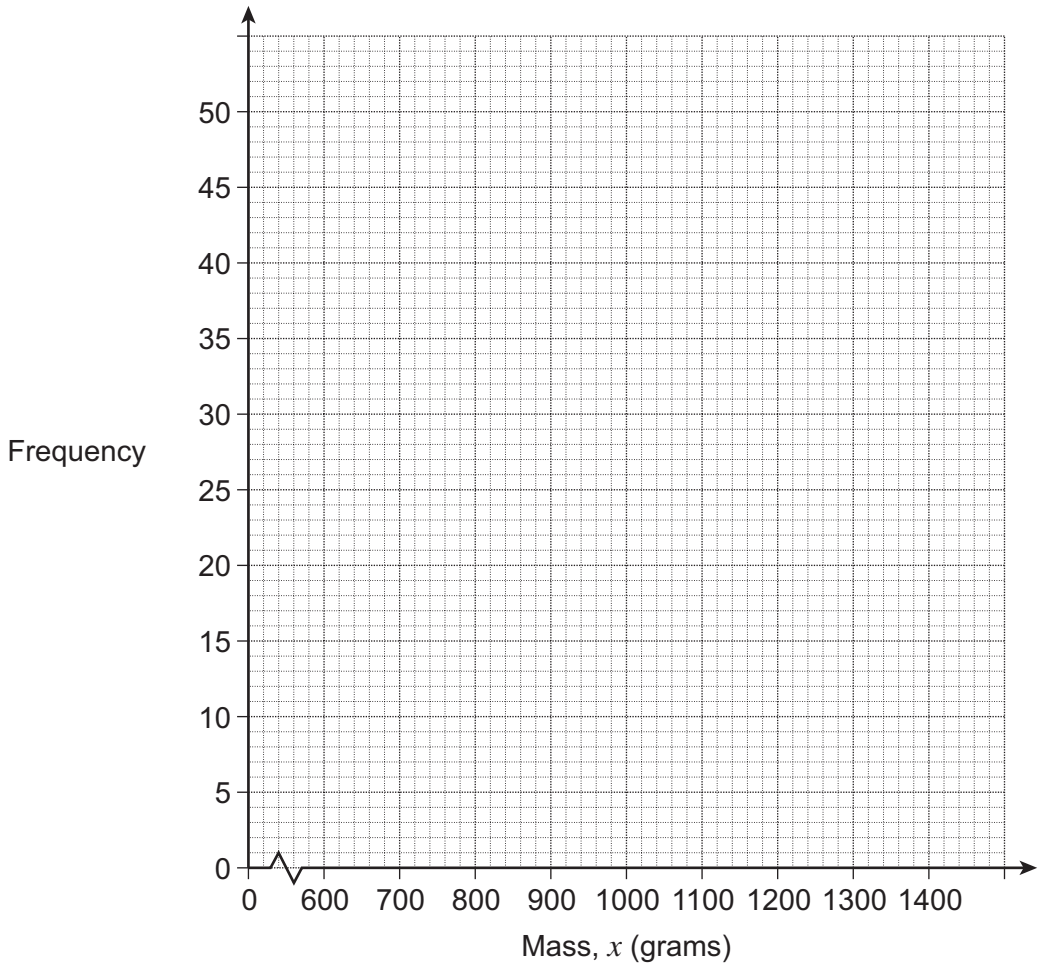
Turn over for the next question

12

13 The masses of 100 bags of sprouts are summarised in the table.

Mass, x (grams)	Frequency
$600 \leqslant x < 800$	10
$800 \leqslant x < 1000$	46
$1000 \leqslant x < 1200$	32
$1200 \leqslant x < 1400$	12

Show the data on a frequency polygon.



(2 marks)

END OF QUESTIONS

2