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 – 13	
14 – 15	
TOTAL	

General Certificate of Secondary Education
Foundation Tier
June 2013

Mathematics 43601F

Unit 1

Monday 17 June 2013 9.00 am to 10.00 am

F

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

Time allowed
- 1 hour

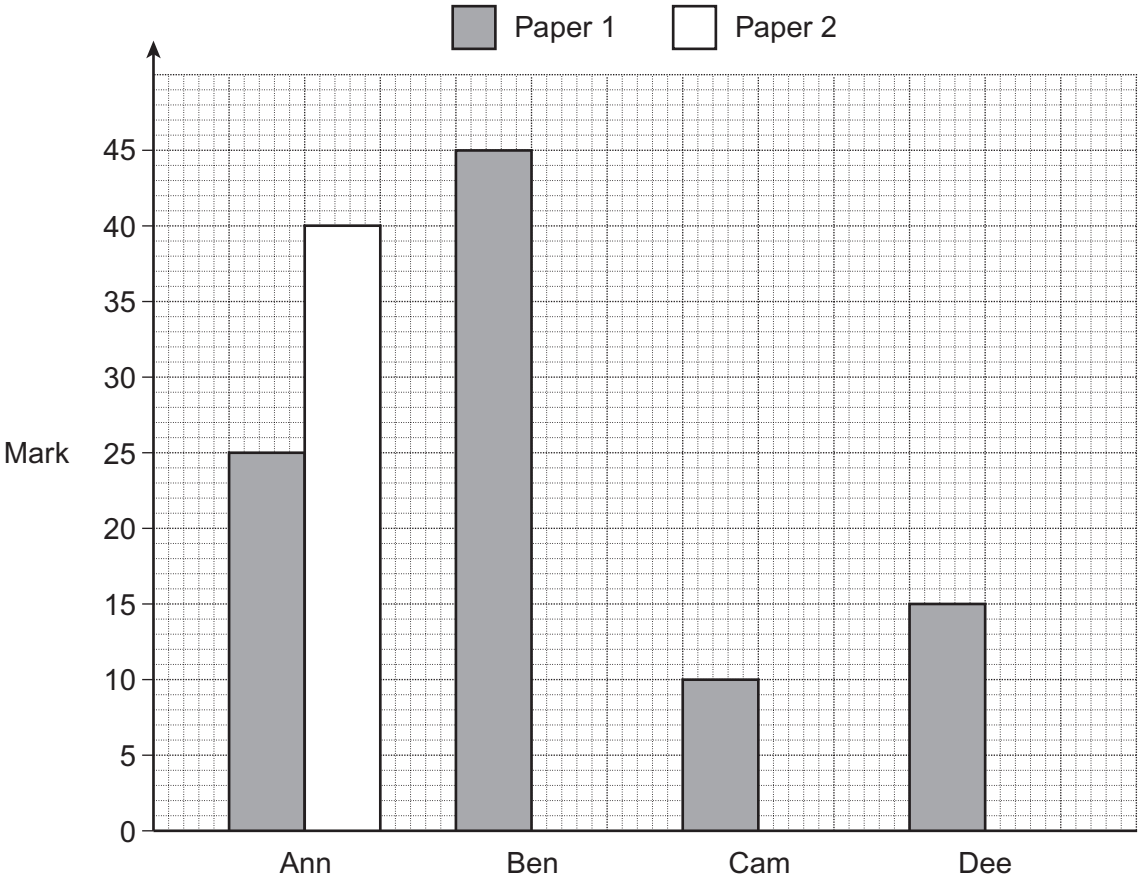
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this 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 3 and 6. 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 Four friends took two exam papers.
Some of the marks are shown on the dual bar chart.



1 (a) Who had the lowest mark on Paper 1?
Circle your answer.

Ann Ben Cam Dee

(1 mark)

1 (b) These are the marks for Paper 2.

	Ann	**Ben**	**Cam**	**Dee**
Paper 2	40	15	30	35

Complete the dual bar chart.

(2 marks)

1 (c) How many marks did Ann get altogether?

.....

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

2 Here are the makes of phones of 15 students.

Samsung	Blackberry	Nokia	Blackberry	Samsung
iPhone	Samsung	Blackberry	Nokia	Samsung
Samsung	iPhone	Nokia	Samsung	Nokia

Complete the table.

The first row has been done for you.

Phone	Tally	Frequency
Blackberry	|||	3
iPhone		
Nokia		
Samsung		
		Total = 15

(3 marks)

8

3 The table shows holiday prices for one person.

	Egypt	**Bulgaria**	**Mexico**	**Portugal**
July	£389	£273	£978	£498
August	£404	£327	£1028	£568
September	£376	£312	£871	£532
October	£202	£167	£518	£285

3 (a) How much is a holiday in Bulgaria in September?

Answer £ ..... *(1 mark)*

3 (b) In August, how much cheaper is a holiday in Egypt than in Portugal?

.....

.....

Answer £ ..... *(2 marks)*

*3 (c)

Special Offer

Holiday for two people

Second person half price

Two friends go to Mexico in October.
They use the special offer.
They share the total cost equally.

How much does each friend pay?

.....

.....

.....

Answer £ ..... *(4 marks)*

Turn over for the next question

7

4 20 people were asked which colour of car they prefer.
The pictogram shows the results.
The key is missing.

Red	
White	
Silver	
Black	
Blue	
Other	

4 (a) Which colour was the most popular?

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

4 (b) Complete the key.

Key:  represents ..... people *(2 marks)*

4 (c) How many **more** people preferred silver than black?

.....

.....

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

5 On packets of seeds it claims

Average contents 30 seeds

Here are the numbers of seeds in 10 packets.

29 30 30 28 32 31 31 33 30 32

5 (a) What fraction of these packets have fewer than 30 seeds?
Give your answer as simply as possible.

.....

.....

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

5 (b) Calculate the mean number of seeds in the 10 packets.

.....

.....

.....

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

10

6 (a) On Saturday a museum had 175 visitors.
28% of them were given a questionnaire.

How many visitors were given the questionnaire?

.....

.....

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

***6 (b)** On Sunday the museum had 242 visitors.
$\frac{2}{11}$ of them were given the questionnaire.

Were **more** people given the questionnaire on Saturday or Sunday?
You **must** show your working.

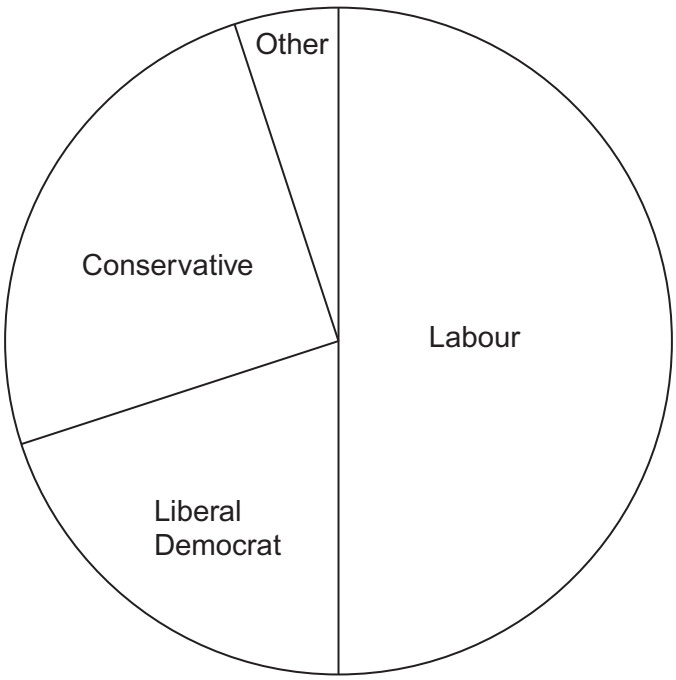
.....

.....

.....

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

7 The pie chart shows how 120 people voted.



7 (a) How many people voted Labour?

.....

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

7 (b) What **percentage** of people voted Liberal Democrat?

.....

.....

.....

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

10

8 A shop manager counts the number of items bought by 15 customers.
The results are shown in the stem-and-leaf diagram.

Key: 3 | 1 represents 31 items

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

8 (a) Write down the median.

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

8 (b) Work out the range.

.....

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

8 (c) Another customer is included.
The median does **not** change.

How many items did this customer buy?

.....

.....

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

9 A restaurant owner gives this survey to her customers.

Question: How many take-aways did you have last month?

Response:
Tick a box

☐ 5 to 10 ☐ 10 to 15 ☐ 15 to 20 ☐ over 20

Write **two** criticisms of the response section.

Criticism 1 .....

.....

Criticism 2 .....

.....

(2 marks)

Turn over for the next question

5

10 A researcher wants to compare the ages of viewers of BBC 1 and Sky 1.

10 (a) Write a suitable hypothesis.

.....

.....

(1 mark)

10 (b) He writes a plan to investigate the hypothesis.

Use the Data Handling Cycle to put his plan in the correct order.

A Work out the mean age for each channel.

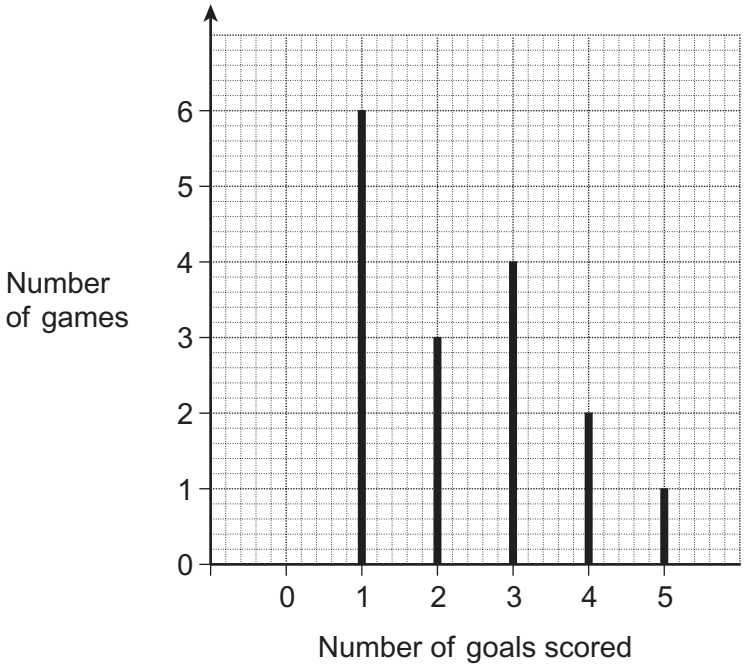
B Select some television viewers to ask.

C Compare the results and comment on the hypothesis.

D Collect data about the ages of the television viewers.

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

11 The diagram shows the number of goals scored by a team in 16 games.



11 (a) In the next 4 games the team did **not** score.

Complete the diagram for all 20 games.

(1 mark)

11 (b) Altogether, how many goals did the team score in the 20 games?

.....

.....

.....

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

11 (c) The team then played one extra game.
In the 21 games, they scored a mean of 2 goals per game.

How many goals did they score in the extra game?

.....

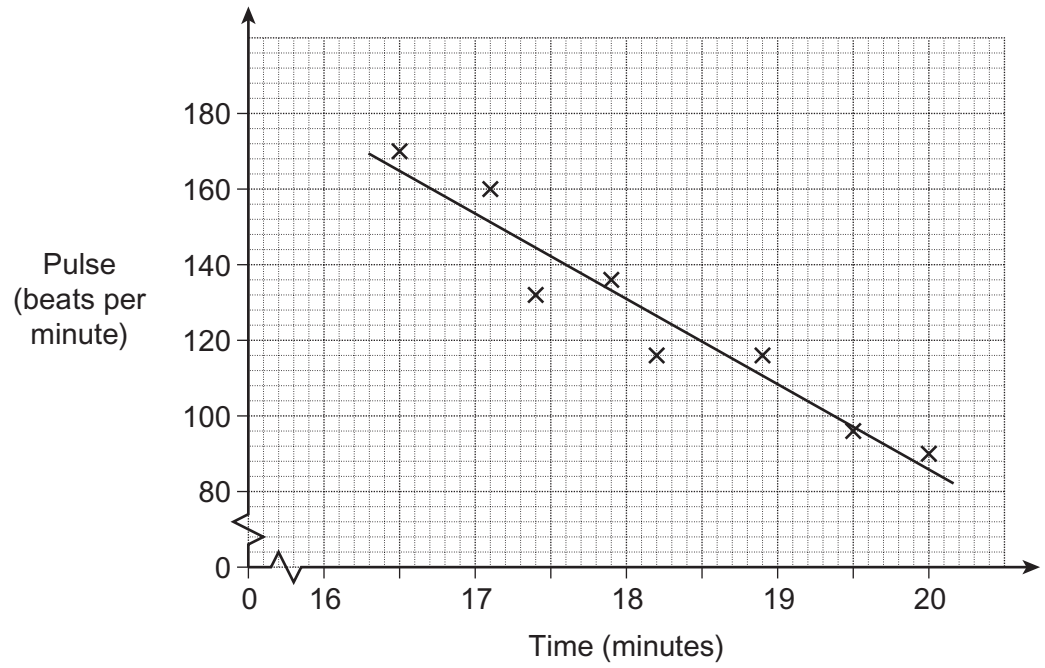
.....

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

8

12 Julia goes for the same run every day.
After each run she records her time and measures her pulse.

The scatter graph shows her results for 8 days.
A line of best fit has been drawn.



12 (a) What type of correlation does the graph show?

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

12 (b) She completes her next run in 18.5 minutes.

Use the line of best fit to estimate her pulse.

.....

Answer ..... beats per minute *(1 mark)*

13 A play area has thousands of coloured balls.
They are white, pink or yellow.

Sam picks 10 balls at random.
The table shows some of her results.

	white	**pink**	**yellow**
Frequency	4		
Relative frequency		0.1	

13 (a) Complete the table.

(3 marks)

13 (b) Sam uses her results to estimate the proportion of white balls in the play area.

How could she make her estimate more reliable?

.....

.....

(1 mark)

END OF QUESTIONS

6

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED