

|                     |  |  |  |  |  |                  |  |  |  |  |
|---------------------|--|--|--|--|--|------------------|--|--|--|--|
| 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  
November 2011

# Mathematics

# 43601F

## Unit 1

Wednesday 9 November 2011 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 4 and 5. 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 booklet.

### Advice

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



N 0 V 1 1 4 3 6 0 1 F 0 1

WMP/Nov11/43601F

# 43601F

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

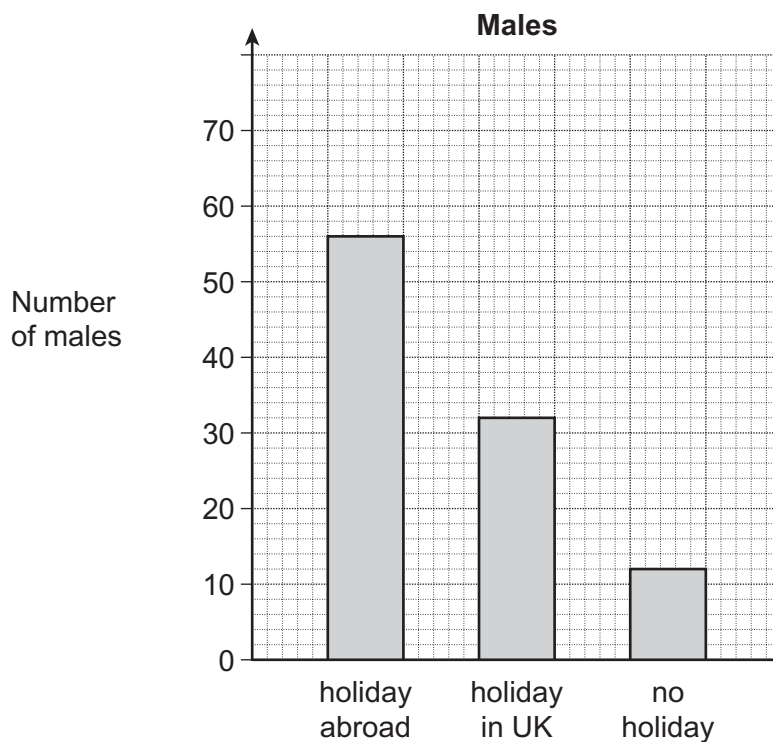
- 1 The table shows information about the main holiday of 200 students in 2011.

|        | Holiday abroad | Holiday in UK | No holiday | Total |
|--------|----------------|---------------|------------|-------|
| Male   | 56             | 32            | 12         | 100   |
| Female | 70             | 24            |            | 100   |

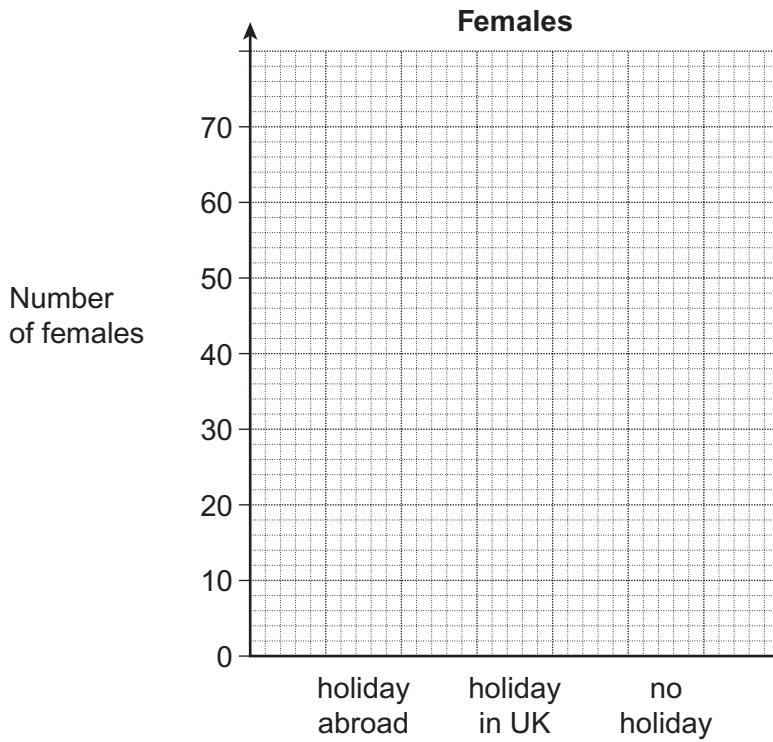
- 1 (a) Complete the table.

..... (2 marks)

- 1 (b) The bar chart shows the information for males.



Draw the bar chart for females.



(3 marks)

1 (c) A travel firm sells holidays to students for 2012.

Do you think they will sell more holidays abroad or holidays in the UK?  
Tick a box.

Holidays abroad

Holidays in UK

Cannot tell

Give a reason for your answer.

.....  
.....

(1 mark)

1 (d) The information for males and females could be shown on a dual bar chart.

Why might this be a good idea?

.....  
.....

(1 mark)

|   |
|---|
| 7 |
|---|

Turn over ►



- 2** John buys a phone.  
He looks at the cost of 60 applications (apps).

| Cost of application | Number of applications |
|---------------------|------------------------|
| free (0p)           | 30                     |
| 59p                 | 16                     |
| 99p                 | 5                      |
| £1.29               | 2                      |
| £1.49               | 1                      |
| £1.99               | 6                      |

- 2 (a)** John buys all the applications costing £1.99

How much does he pay?

.....

Answer £ ..... (2 marks)

- 2 (b)** What fraction of the 60 applications are free?  
Give your answer in its simplest form.

.....

Answer ..... (2 marks)

- 2 (c)** What percentage of the 60 applications cost £1.99?

.....

.....

Circle the correct answer.

6%      10%      16%      60%

(1 mark)

- 2 (d)** John wants to know the make of phone used by people in his class.

Write down a suitable data collection method.

Answer ..... (1 mark)



**3 (a)** Tick the correct column for each statement.

| Statement  | Never True | Sometimes True | Always True |
|--|------------|----------------|-------------|
| An impossible event has a probability of $-1$          |            |                |             |
| An event which is unlikely has a probability of $0.75$ |            |                |             |
| An event which is certain has a probability of $1$     |            |                |             |

(3 marks)

**3 (b)** Put these probabilities in order starting with the lowest.

0.3

$\frac{1}{3}$

33%

Lowest .....

.....

Highest .....

(2 marks)



\*4 Ian sells cans of drinks.

4 (a) The table shows the percentages of drinks sold on Monday morning.

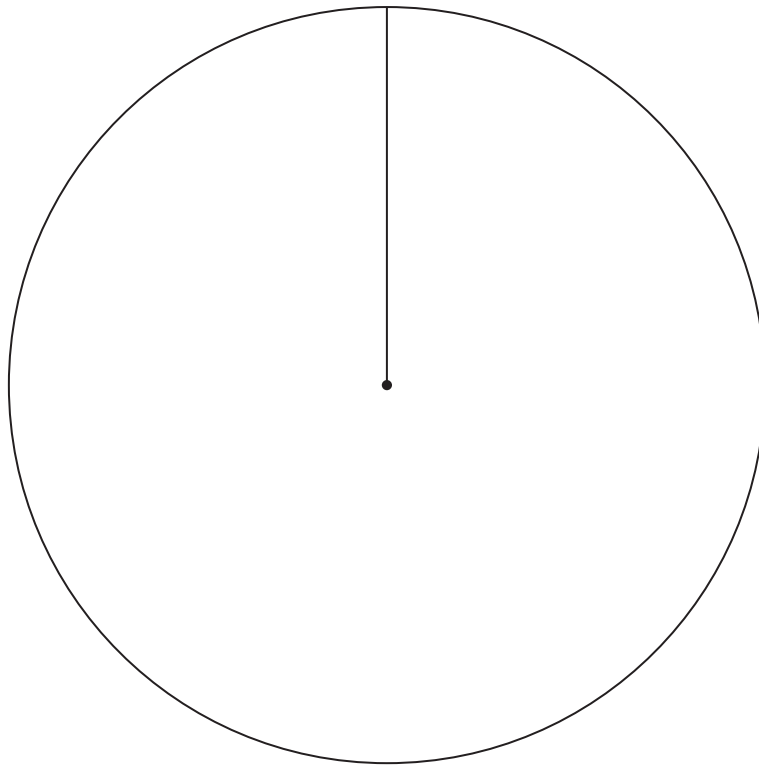
| Drink    | Percentage Sold |
|----------|-----------------|
| Cola     | 30 %            |
| Lemonade | 20 %            |
| Orange   | 50 %            |

Draw a pie chart for the data.

.....

.....


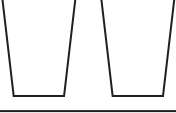
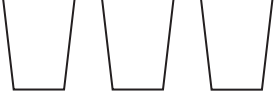
.....



(4 marks)



4 (b) The pictogram shows information about the drinks sold on Monday afternoon.  
The key is missing.

|          |   |
|----------|---|
| Cola     |  |
| Lemonade |  |
| Orange   |  |

80 cans were sold that afternoon.

How many cans of cola were sold?

.....

.....

.....

Answer ..... (3 marks)

4 (c) 80 cans were also sold in the morning.

4 (c) (i) Write down **one** difference between the cans sold in the morning and in the afternoon.

.....

.....

(1 mark)

4 (c) (ii) Ian orders more cans.

Which flavour should he order least of, based on Monday's sales?  
Circle your answer.

Cola

Lemonade

Orange

(1 mark)



\*5 A 10p coin and a 2p coin are tossed.

List **all** the possible outcomes.  
Use H for heads and T for tails.

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

(2 marks)

6 Here is a list of numbers.

0                    3                    5                    7                    12                    29

6 (a) Write down **three** numbers from the list with a median of 7.

Answer    ..... , ..... and .....                    (1 mark)

6 (b) Write down **three** numbers from the list with a range of 7.

.....  
.....

Answer    ..... , ..... and .....                    (1 mark)

6 (c) Find **three** numbers from the list with a mean that is a whole number.

.....  
.....

Answer    ..... , ..... and .....                    (2 marks)

6 (d) Find **three** numbers from the list with the range double the median.  
Write down the values of the range and median.

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

Answer    ..... , ..... and .....

Range = ..... Median = .....                    (3 marks)





7 Liz is buying a new car and selling her old car.  
Here are three offers for the same model of new car.

|                            |
|----------------------------|
| <b>Offer 1</b>             |
| New car £10 599            |
| If old car given to garage |
| £3375 off                  |

|                            |
|----------------------------|
| <b>Offer 2</b>             |
| New car £11 100            |
| If old car given to garage |
| $\frac{1}{3}$ off          |

|                            |
|----------------------------|
| <b>Offer 3</b>             |
| New car £9600              |
| If old car given to garage |
| 25% off                    |

Which offer is best?  
You **must** show your working.

.....

.....

.....

.....

.....

.....

Answer ..... (5 marks)



**8** Olivia usually drives home from work.  
Some of her journey times are shown.

**Week 1**

|                      | <b>Mon</b> | <b>Tue</b> | <b>Wed</b> | <b>Thu</b> | <b>Fri</b> |
|----------------------|------------|------------|------------|------------|------------|
| Leaves work (pm)     | 5.13       | 5.24       | 5.30       | 5.28       | 5.02       |
| Arrives home (pm)    | 5.55       | 6.03       | 6.15       | 6.06       | 5.32       |
| Time taken (minutes) | 42         | 39         | 45         | 38         | 30         |

**Week 2**

|                      | <b>Mon</b> | <b>Tue</b> | <b>Wed</b> | <b>Thu</b> | <b>Fri</b> |
|----------------------|------------|------------|------------|------------|------------|
| Leaves work (pm)     | 5.15       | 5.18       | 5.20       | 5.07       | 5.10       |
| Arrives home (pm)    | 5.49       | 5.50       | 5.57       | 5.40       |            |
| Time taken (minutes) |            | 32         | 37         | 33         | 121        |

**8 (a)** How long did it take Olivia to drive home on Monday of week 2?

Answer ..... minutes (1 mark)

**8 (b)** On Friday of week 2 Olivia walked home.

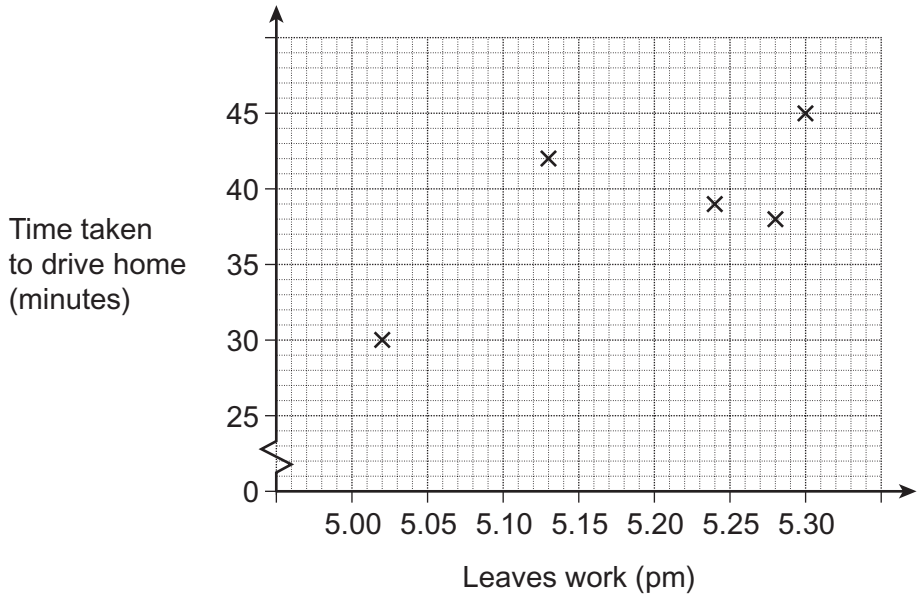
What time did she arrive home?

.....  
.....

Answer ..... pm (2 marks)



**8 (c)** Complete the scatter diagram for the **four** days she drives home in week 2.



(2 marks)

**8 (d)** Estimate the time Olivia would have arrived home on Friday of week 2 if she had driven.

Use your scatter diagram to show how you decide.

.....

.....

Answer ..... pm (3 marks)

**Turn over for the next question**



9 People in a town voted in an election.  
The probability a vote was given to a particular party is shown.  
One value is missing.

| Party            | Probability |
|------------------|-------------|
| Conservative     | 0.41        |
| Labour           | 0.24        |
| Liberal Democrat | 0.22        |
| UKIP             |             |
| Other            | 0.04        |

9 (a) Complete the table.

.....

..... (2 marks)

9 (b) There are 15 000 people in the town.  
8000 voted.

How many people in the town did **not** vote Conservative?

.....

.....

.....

Answer ..... (3 marks)

**END OF QUESTIONS**

