

Please write clearly in block capitals.

Centre number

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Candidate number

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Forename(s)

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# GCSE MATHEMATICS

# F

Foundation Tier      Unit 1 Statistics and Number

Thursday 26 May 2016

Morning

Time allowed: 1 hour

## Materials

For this paper you must have:

- a calculator
- mathematical instruments.



## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- 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 11. 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.




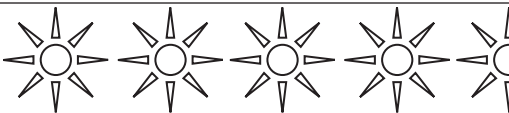
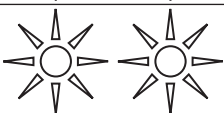

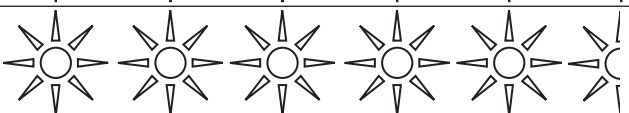
Answer **all** questions in the spaces provided.

**1** The pictograms show information about the weather in four cities one year.

Key :  represents 20 days

	Number of rainy days
<b>Adelaide</b>	
<b>Melbourne</b>	
<b>Perth</b>	
<b>Sydney</b>	

Key :  represents 20 days

	Number of sunny days
<b>Adelaide</b>	
<b>Melbourne</b>	
<b>Perth</b>	
<b>Sydney</b>	



1 (a) Circle the city that had the lowest number of rainy days. [1 mark]

Adelaide                      Melbourne                      Perth                      Sydney

1 (b) Circle the city that had  
100 rainy days  
**and** more than 100 sunny days. [1 mark]

Adelaide                      Melbourne                      Perth                      Sydney

1 (c) How many **more** sunny days than rainy days did Adelaide have? [2 marks]

\_\_\_\_\_

Answer \_\_\_\_\_

1 (d) Use the pictograms to make **two** comparisons between Melbourne and Perth. [2 marks]

Comparison 1 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

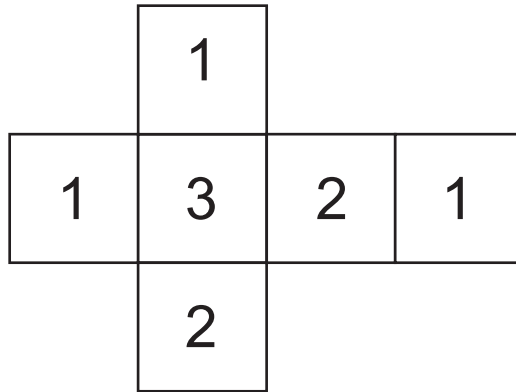
Comparison 2 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



- 2 The diagram shows the six faces of a fair dice.



The dice is rolled.

- 2 (a) Circle the chance of rolling a 1

[1 mark]

impossible

unlikely

evens

likely

certain

- 2 (b) Circle the chance of rolling a 3

[1 mark]

impossible

unlikely

evens

likely

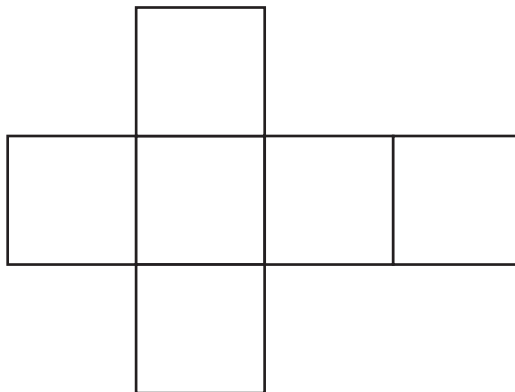
certain

- 2 (c) A different fair dice uses only the numbers 4, 5 and 6

Label the diagram so that the dice is

- equally likely to land on 4 and 5
- likely to land on 6

[2 marks]



3 100 people vote for A, B, C or D.

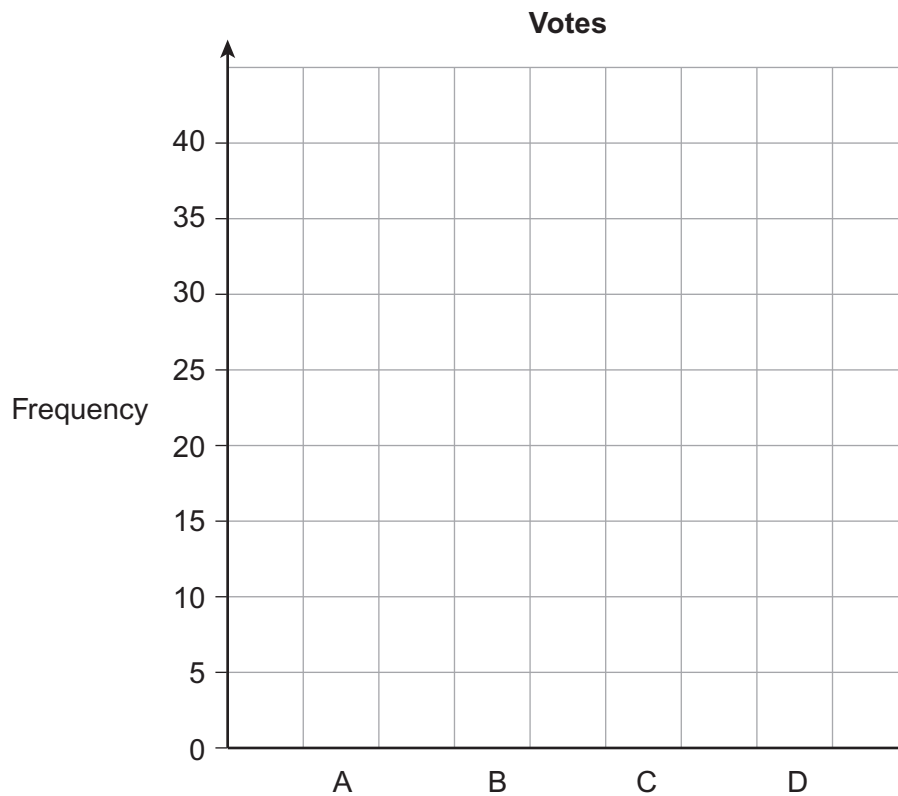
35 vote for A.

$\frac{1}{4}$  vote for B.

20 **more** vote for C than D.

Use the grid to show this information on a bar chart.

[4 marks]



**4 (a)** Here is a list of Meera's wages for March and April.

March	April
£131.00	£104.80
£163.75	£144.10
£117.90	£117.90
£170.30	£131.00

In total, how much **more** were her wages in March than in April?

**[2 marks]**

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Answer £ \_\_\_\_\_

**\*4 (b)** In June, her total wages are £560  
She saves 12% of this amount.

How much does she save?

**[2 marks]**

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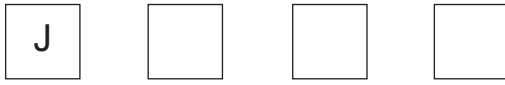


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Answer £ \_\_\_\_\_



- 5 There are four seats in a row for Jon (J), Kim (K), Lee (L) and Mo (M).  
Jon sits in the first seat.



The others choose a seat at random.

- 5 (a) Write down **all** the possible arrangements.  
One has been done for you.

[2 marks]

J K L M

- 5 (b) What is the probability that Kim and Lee sit next to each other?

[1 mark]

\_\_\_\_\_

Answer \_\_\_\_\_

7

Turn over ►



6 Some cards have a number written on them.



6 (a) Write down the **three** cards with a range of 2

[1 mark]

Three empty rounded rectangular boxes arranged horizontally, intended for the student to write the numbers of the three cards that have a range of 2.

6 (b) Write down the **three** cards with a mean of 5

[2 marks]

Three empty rounded rectangular boxes arranged horizontally, intended for the student to write the numbers of the three cards that have a mean of 5.

6 (c) Write down the **four** cards with a median of 8.5 **and** a mode of 7

[2 marks]

Four empty rounded rectangular boxes arranged horizontally, intended for the student to write the numbers of the four cards that have a median of 8.5 and a mode of 7.



7 A travel company gives this survey to its customers.

How many hotels have you stayed in?  
Tick a box.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0 to 3	3 to 6	7 to 10	11 to 14

7 (a) Write down **two** things that are wrong with this survey. [2 marks]

1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

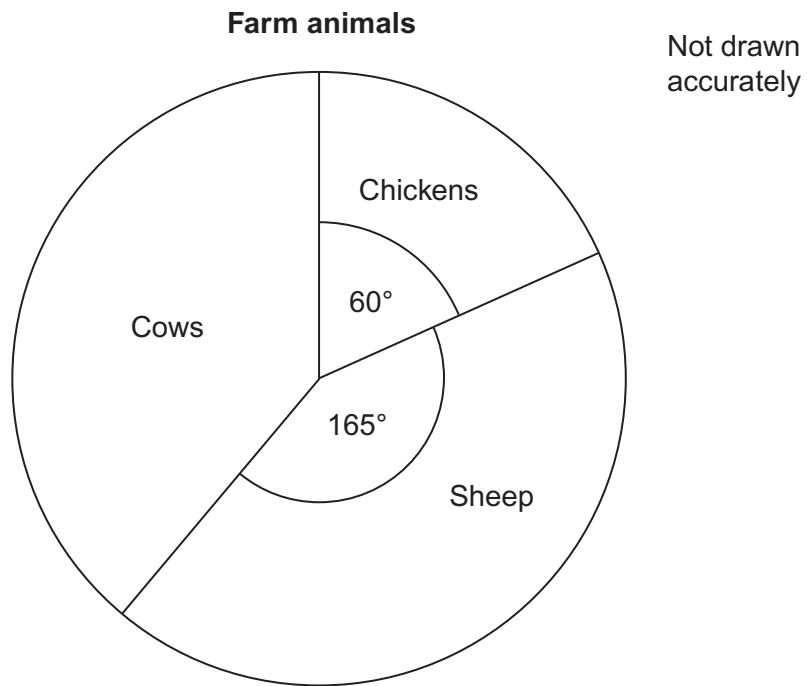
2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7 (b) Complete the response section for this question. [1 mark]

How many nights did you stay in a hotel last week?



- 8 The pie chart represents the numbers of animals on a farm.



- 8 (a) There are 20 chickens.

Work out the number of sheep.

**[2 marks]**

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Answer \_\_\_\_\_



**8 (b)** What percentage of the animals are cows?

**[3 marks]**

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Answer \_\_\_\_\_ %

**Turn over for the next question**

5

**Turn over ►**



**9 (a)** Each act in a show has no more than 4 people.

Number of people in act	Number of acts	
1	12	
2	9	
3	2	
4		

Altogether there are 68 people.

Work out the number of acts with 4 people.

**[3 marks]**

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Answer \_\_\_\_\_

**9 (b)** 64% of the audience are female.

Work out the ratio females : males

Give your answer in its simplest form.

**[2 marks]**

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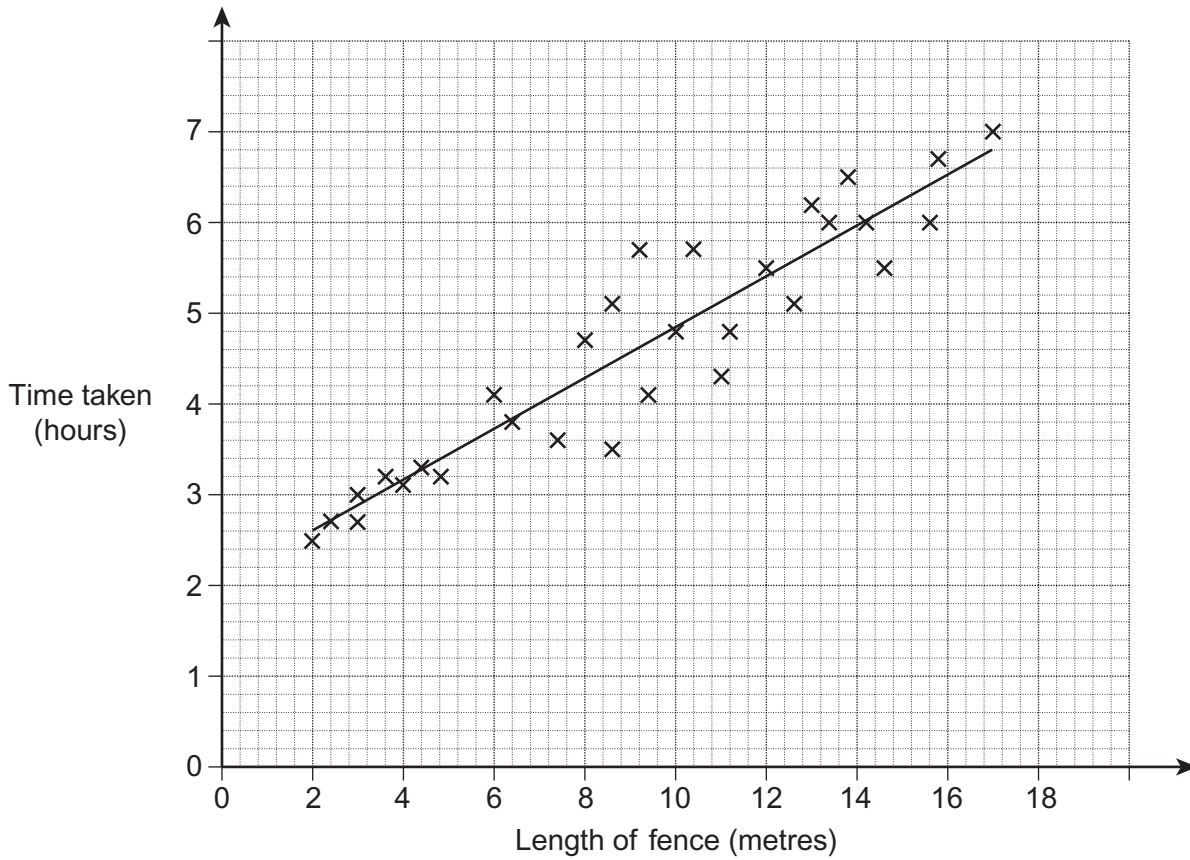


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Answer \_\_\_\_\_ : \_\_\_\_\_



- 10** Joe puts up fences of different lengths.  
The scatter graph shows the time taken for each fence.  
A line of best fit has been drawn.



- 10 (a)** Describe the correlation.

[1 mark]

Answer \_\_\_\_\_

- 10 (b)** Estimate the length of fence that Joe can put up in 4 hours.

[1 mark]

Answer \_\_\_\_\_ metres



- 11** Tess shopped at a supermarket once a week for 15 weeks.  
Here are the amounts she spent, in £, each week.

43	35	39	40	38
36	29	56	32	47
38	52	24	48	21

- \*11(a)** Show the data on an ordered stem-and-leaf diagram.  
Remember to complete the key.

**[4 marks]**

Key: \_\_\_\_\_ | \_\_\_\_\_ represents £ \_\_\_\_\_

_____		_____
_____		_____
_____		_____
_____		_____



- 11 (b)** Tess collects reward points each week based on the amount spent.

Amount spent each week	Reward points
Less than £25	0
£25 – £50	10
More than £50	20

Each point is worth 4 pence.

Work out the value, in £, of the points she has collected.

**[3 marks]**

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Answer £ \_\_\_\_\_

**Turn over for the next question**



**12** The table shows the ages of some teachers.

Age (years)	Frequency
$20 \leq \text{age} < 30$	5
$30 \leq \text{age} < 40$	13
$40 \leq \text{age} < 50$	9
$50 \leq \text{age} < 60$	6
$60 \leq \text{age} < 70$	2

**12 (a)** How many of the teachers are at least 40 years old?

**[1 mark]**

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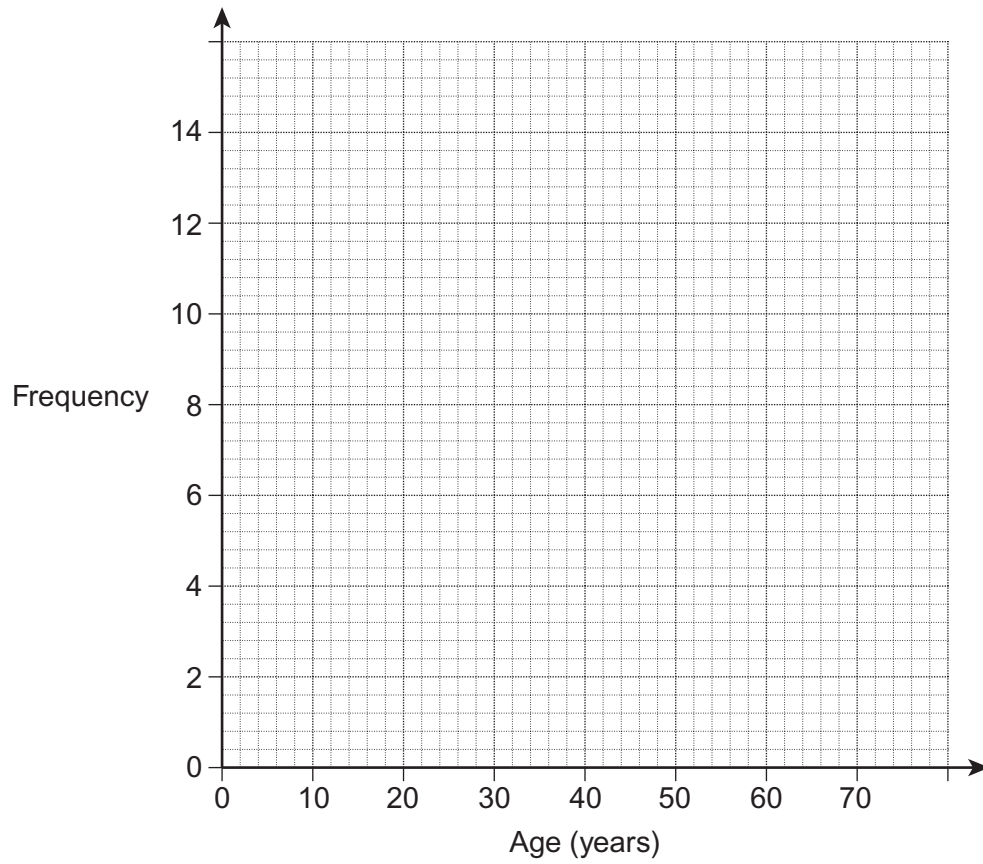
Answer \_\_\_\_\_





12 (b) Draw a frequency polygon to represent the data.

[2 marks]



Turn over for the next question



13

A game had 100 lettered tiles.

The probability of choosing an **A** at random was  $\frac{3}{25}$

20 tiles were then lost.

The probability of choosing an **A** at random is now  $\frac{1}{10}$

How many **A** tiles were lost?

**[3 marks]**

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Answer \_\_\_\_\_

**END OF QUESTIONS**

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