

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Mathematics B

Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Monday 13 June 2011 – Afternoon

Paper Reference

Time: 1 hour 15 minutes**5MB1F/01****You must have:**

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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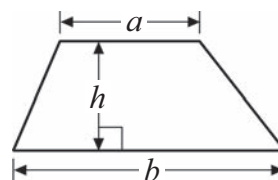
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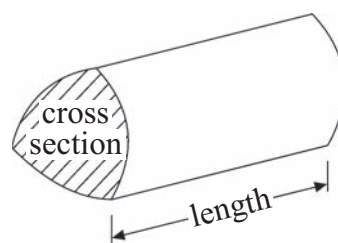
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Here is the value of each of 20 coins.

50p	10p	£1	20p	£1
20p	£1	20p	50p	10p
50p	20p	20p	£1	20p
£1	£1	20p	20p	£1

(a) Complete the table.

Value of coin	Tally	Frequency
10p		
20p		
50p		
£1		

(3)

(b) Work out the total value of the 20 coins.

£

(2)

(Total for Question 1 is 5 marks)



2 The table shows information about 5 cameras.

Camera	Specification		
	Cost (£)	Weight (grams)	Resolution (megapixels)
A	134	467	10
B	280	186	12
C	119	152	10
D	280	206	12
E	299	515	12

(a) Which of these cameras costs the most?


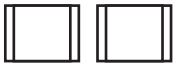
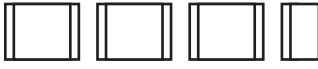

.....
(1)

Two of these cameras cost under £200

(b) Which of these two cameras weighs the most?

.....
(1)

The pictogram shows the number of cameras sold in a shop in week 1, in week 2, in week 3 and in week 4.

week 1	
week 2	
week 3	
week 4	
week 5	

Key:  represents 8 cameras

(c) How many cameras were sold in week 2?

.....
(1)

(d) How many cameras were sold in week 3?

.....
(1)

12 cameras were sold in week 5

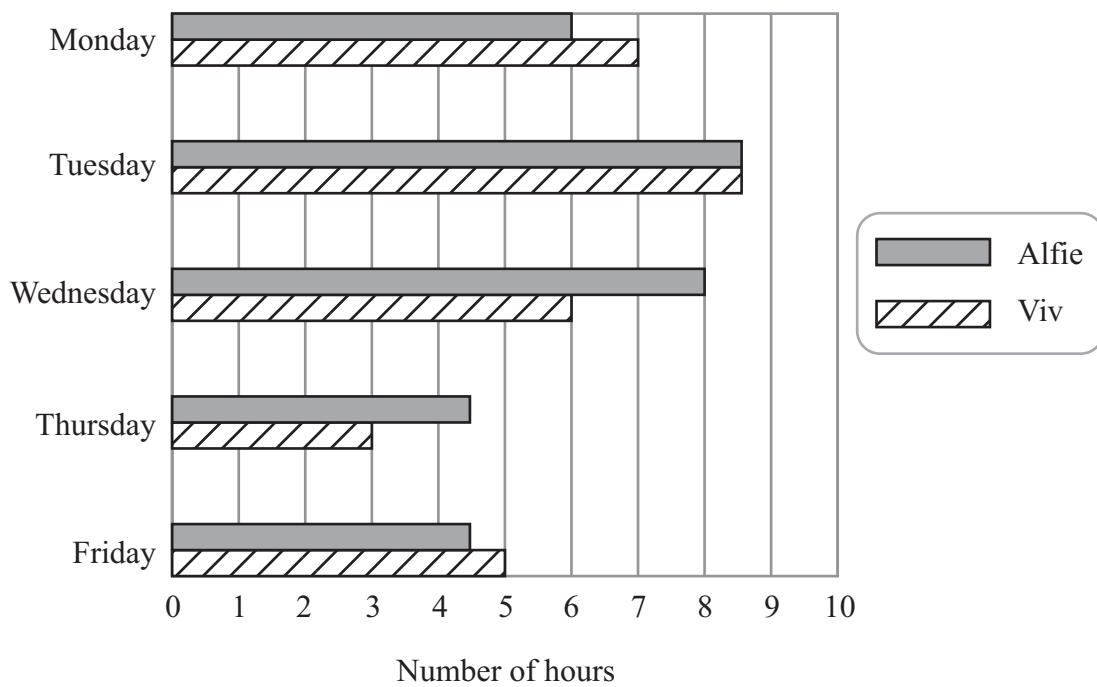
(e) Show this on the pictogram.

.....
(1)

(Total for Question 2 is 5 marks)



3 The dual bar chart shows information about the numbers of hours Viv and Alfie worked on each day from Monday to Friday last week.



Viv worked more hours than Alfie on **two** of these days.

(a) Write down these two days.

.....
 and
 (2)

Alfie worked more hours, in total, than Viv from Monday to Friday last week.

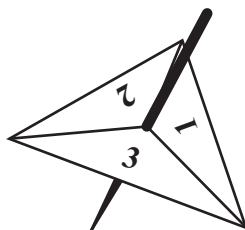
(b) Work out how many more hours.

..... hours
 (3)

(Total for Question 3 is 5 marks)



- 4 Angela has a 3-sided spinner.
The sides of the spinner are numbered 1, 2 and 3



(a) Angela spins the spinner once.

- (i) Choose the word that best describes the probability that the spinner will land on the number 4

impossible unlikely evens likely certain

.....

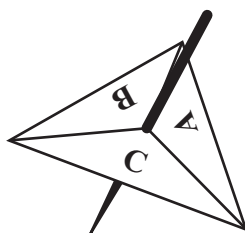
- (ii) Choose the word that best describes the probability that the spinner will land on a number less than 4

impossible unlikely evens likely certain

.....

(2)

Steve also has a 3-sided spinner.
The sides of Steve's spinner are lettered A, B and C.



Angela spins her spinner once.
Steve then spins his spinner once.

- (b) List all the possible outcomes of these two spins.

.....

.....

(2)

(Total for Question 4 is 4 marks)



5 The table shows the midday temperature on each day for ten days.

Day	1	2	3	4	5	6	7	8	9	10
Temperature (°C)	13	14	12	10	13	16	14	13	18	16

(a) Find the range of temperatures.

..... °C
(2)

(b) Write down the mode.

..... °C
(1)

(c) Work out the mean temperature.

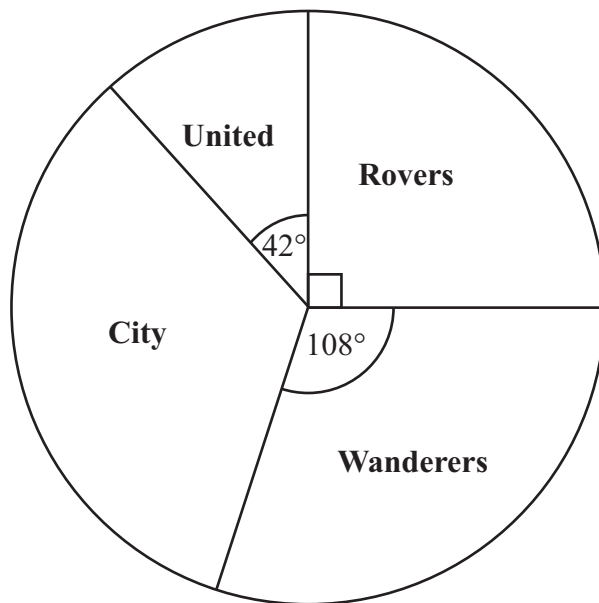
..... °C
(2)

(Total for Question 5 is 5 marks)



6 Alex asked some people to name their favourite football team.

The pie chart shows his results.



(a) What fraction of the people named Rovers as their favourite team?

.....
(1)

20 people named City as their favourite football team.

(b) How many people named Rovers as their favourite team?

.....
(4)

(Total for Question 6 is 5 marks)



7 Here is a list of some TV programmes for one day.

13 30	News
13 45	Doctors
14 10	Escape to the country
15 05	CBeebies
15 15	Gigglebiz
15 35	Jakers
15 55	Shaun the sheep
16 05	Dani's house

Caroline wants to record CBeebies and Jakers onto a DVD.

How many minutes of recording time does she need?

..... minutes

(Total for Question 7 is 2 marks)

8 The two-way table shows some information about how some students travelled to school yesterday.

	Walk	Bus	Cycle	Total
Boys		4	4	13
Girls	2	6	3	11
Total	7	10	7	24

One of these students is picked at random.

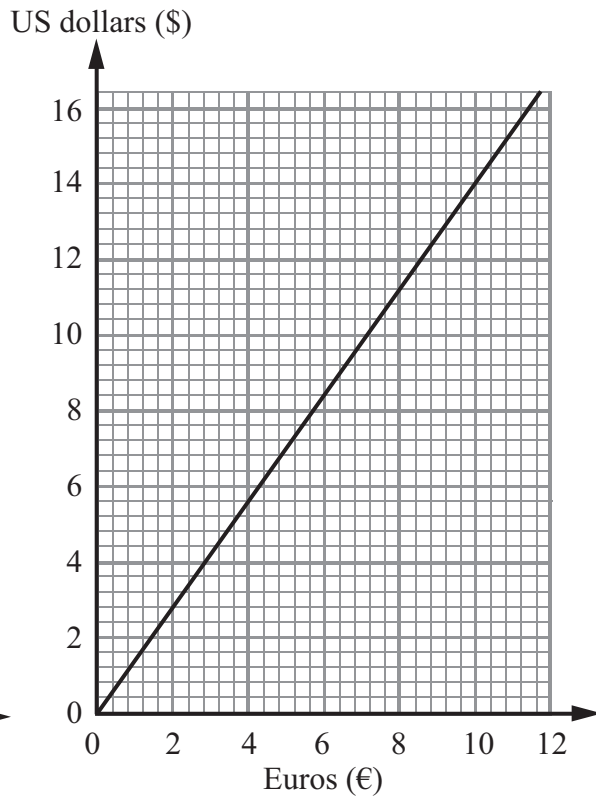
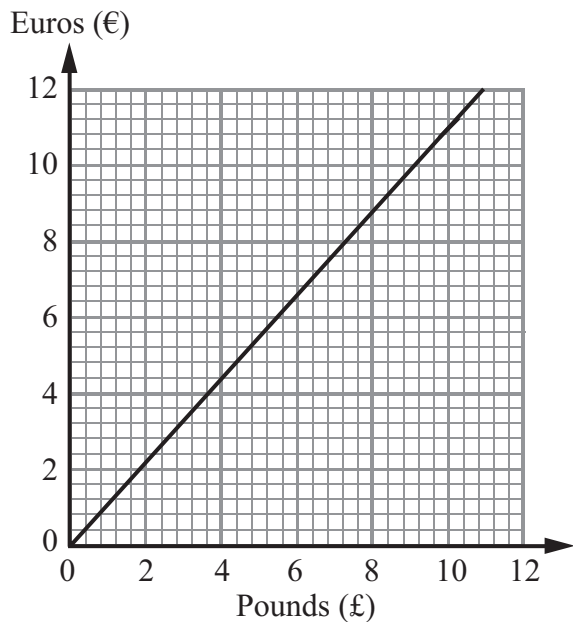
Work out the probability that this student will be a boy who walked to school yesterday.

.....

(Total for Question 8 is 3 marks)



9 These graphs can be used to convert between pounds (£), Euros (€) and US dollars (\$).



(a) Convert £6 to Euros (€).

€
(1)

(b) Convert \$5 to Euros (€).

€
(1)

On the internet, Amir sees a pair of trainers.
The trainers cost \$65

(c) Work out the cost of the trainers in pounds (£).



£
(4)

(Total for Question 9 is 6 marks)



10 Stuart is organising a trip to a theme park.

This table shows the age of each person going on the trip.

Name	Age (years)
Stuart	47
Helen	43
Samantha	18
Georgina	15
Melissa	11
Alfie	4
Finlay	1

This table shows the costs of the tickets to the theme park.

Ticket	Cost (£)
Adult (16 to 59 years)	£14
Child (4 to 15 years)	£10
Infant (0 to 3 years)	free
Group of 4 people (2 Adults + 2 children, or 1 Adult + 3 children)	£43
Senior Citizen (60+ years)	£12

Work out the cheapest total cost of the tickets.
You must show all of your working.

£

(Total for Question 10 is 5 marks)



- 11 There are 25 students in a class.
12 of the students are girls.

Here are the heights, in cm, of the 12 girls.

160 173 148 154 152 164 179 164 162 174 168 170

- (a) Show this information in an ordered stem and leaf diagram.

14		
15		
16		
17		

(3)

There are 13 boys in the class.

Here are the heights, in cm, of the 13 boys.

157 159 162 166 168 169 170 173 174 176 176 181 184

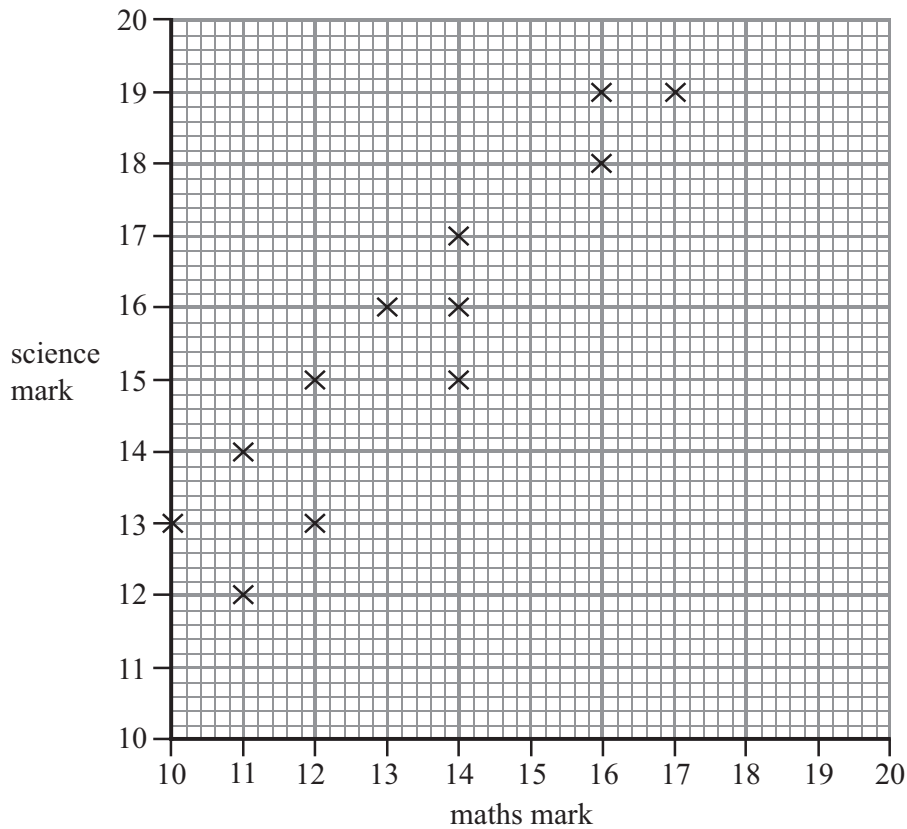
- *(b) Compare the heights of the boys with the heights of the girls.

(3)

(Total for Question 11 is 6 marks)



12 Mr Kent's students did a maths test and a science test.
The scatter graph shows the marks of 12 of these students.



The table shows the marks of two more students.

Name	maths	science
Masood	12	14
Nimer	17	20

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does this scatter graph show?

.....
(1)

David did the maths test.
He was absent for the science test.

David's mark in the maths test was 15

(c) Estimate a science mark for David.

.....
(2)

(Total for Question 12 is 4 marks)



13 Deniz has a 4-sided spinner.

The sides of the spinner are numbered 1, 2, 3 and 4

The spinner is biased.

The table shows each of the probabilities that the spinner will land on 1, on 3 and on 4

The probability that the spinner will land on 3 is x .

Number	1	2	3	4
Probability	0.3		x	0.1

- (a) Find an expression, in terms of x , for the probability that the spinner will land on 2
Give your answer in its simplest form.

.....
(2)

Deniz spins the spinner 300 times.

- (b) Write down an expression, in terms of x , for the number of times the spinner is likely to land on 3

.....
(1)

(Total for Question 13 is 3 marks)



14 Helen carries out a survey on healthy eating.

She uses these two questions in a questionnaire.

question 1	What is your age?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		under 20	20 to 40	40 to 60	over 60
question 2	You should eat fruit every day. You do agree, don't you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Yes	No	Don't know	

Write down **one** thing wrong with each of these questions.

question 1

.....

.....

question 2

.....

.....

(Total for Question 14 is 2 marks)

TOTAL FOR PAPER IS 60 MARKS



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