

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Mathematics B

Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Friday 2 March 2012 – Afternoon

Time: 1 hour 15 minutes

Paper Reference

5MB1F/01

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of 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.

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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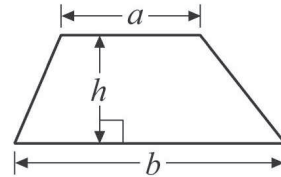
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GCSE Mathematics 2MB01

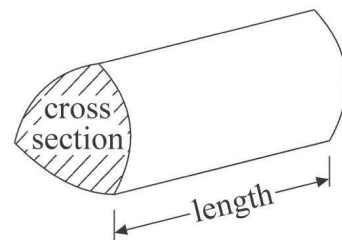
Formulae: Foundation Tier

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

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



Volume of prism = area of cross section \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

- 1 Here is a mileage table.
It shows the distances, in miles, between four cities.

Swansea			
42	Cardiff		
81	44	Bristol	
188	153	120	London

- (a) What is the distance from Swansea to Cardiff?

..... miles
(1)

- (b) What is the distance from Bristol to Swansea?

..... miles
(1)

(Total for Question 1 is 2 marks)



2 Alfie recorded the numbers of vehicles passing his house one day.

The tally chart shows this information.

Type of vehicle	Tally
Bicycle	
Bus	
Car	
Lorry	
Motorbike	
Van	

(a) How many cars did Alfie record?

.....
(1)

(b) Alfie recorded one type of vehicle only twice.
Which type?

.....
(1)

(c) Work out the total number of vehicles Alfie recorded.

.....
(2)

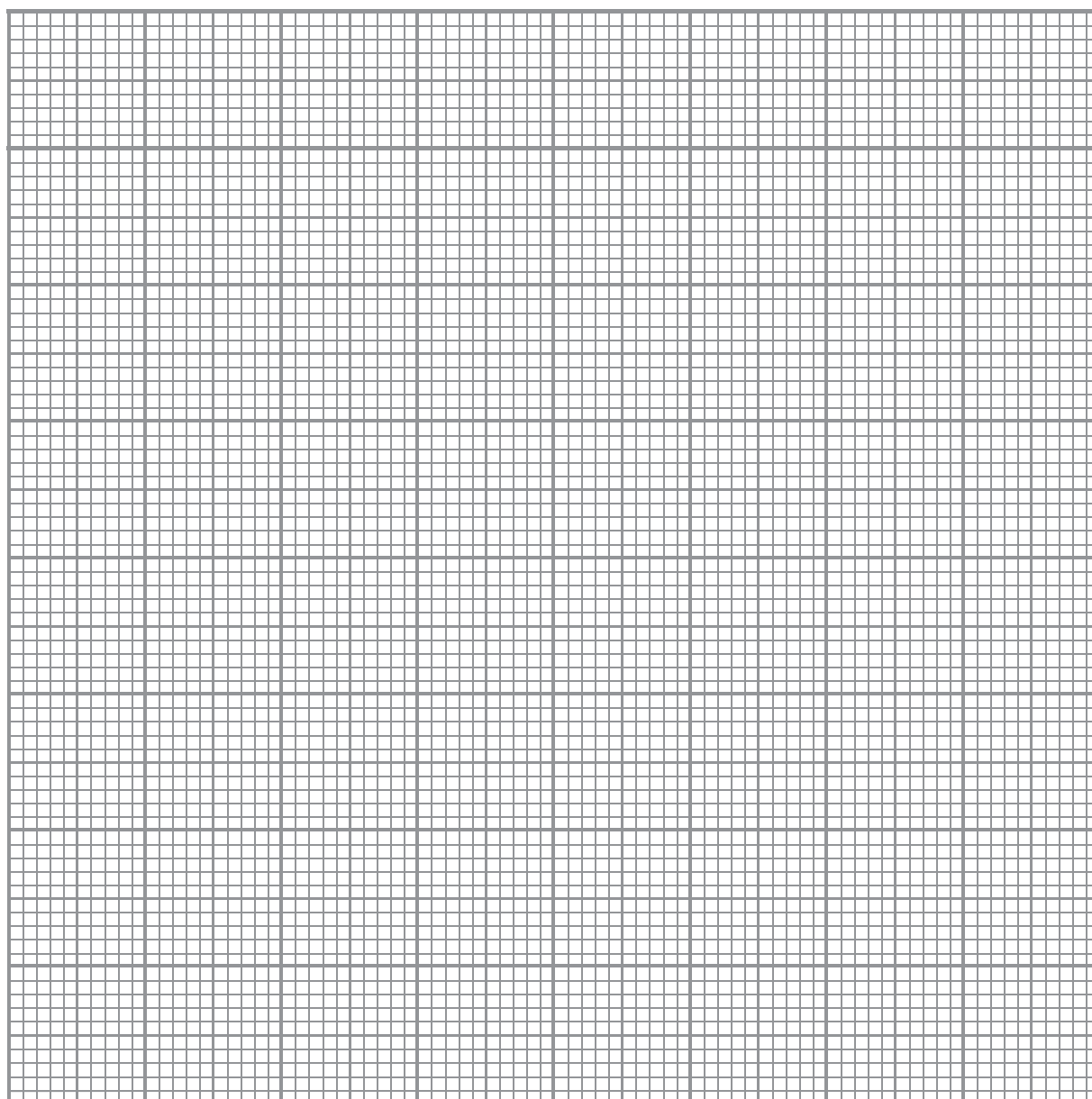
(Total for Question 2 is 4 marks)



*3 The table shows the numbers of texts Alexa and Ryan sent on each of 5 days one week.

	Monday	Tuesday	Wednesday	Thursday	Friday
Alexa	3	4	2	5	6
Ryan	6	2	5	4	3

Show this information in a suitable diagram.



(Total for Question 3 is 4 marks)



4 The table shows information about 5 Ford cars.

Car	Number of doors	Engine size (litres)	Type of fuel	Cost (£)
Focus	2	2.0	petrol	18 495
Mondeo	5	2.0	diesel	21 495
Ka	3	1.2	petrol	7 995
Fusion	5	1.4	petrol	11 595
Galaxy	5	2.0	diesel	21 995

(a) Which car has the smallest engine size?

.....
(1)

(b) How many of these cars have 5 doors **and** use petrol?

.....
(1)

Three of the cars have 5 doors.

(c) Which of these three cars costs the least?

.....
(1)

(Total for Question 4 is 3 marks)



5 Keira uses letter cards to spell the word MATHEMATICS.



Keira is going to take at random one of these cards.

(a) Choose the word that best describes the probability that the card will have the letter S on it.

impossible unlikely evens likely certain

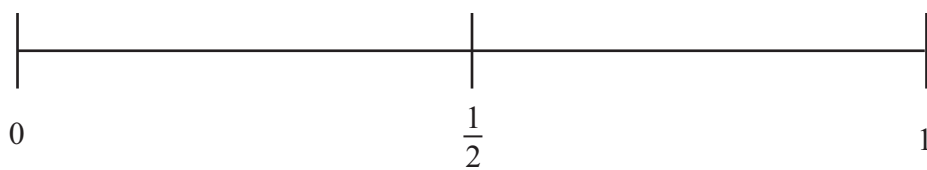
.....
(1)

(b) Choose the word that best describes the probability that the card will have the letter P on it.

impossible unlikely evens likely certain

.....
(1)

(c) On the probability scale below, mark with a cross (×), the probability that the card will have the letter K on it.



(1)

(d) Write down the probability that the card will have the letter M on it.

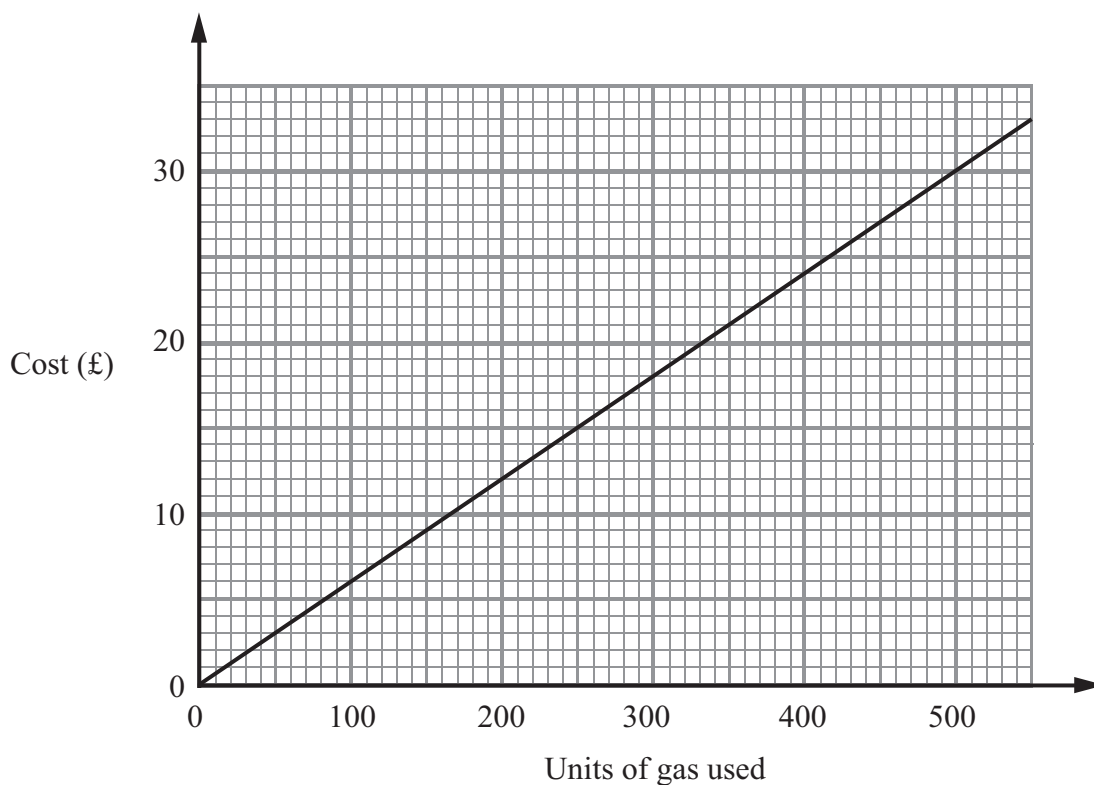
.....
(2)

(Total for Question 5 is 5 marks)



6 A gas company charges the same amount for each unit of gas used.

Karen uses the graph to work out the cost of the gas she has used.



(a) Use the graph to write down

(i) the cost of 200 units of gas,

£

(ii) the number of units of gas used when the cost is £27

..... units

(2)

(b) Work out the cost of one unit of gas.

.....

(2)

(c) Work out the cost of 1300 units of gas.

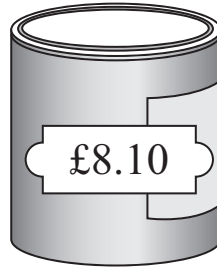
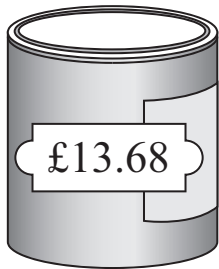
.....

(2)

(Total for Question 6 is 6 marks)



7 Jenny is decorating her bedroom.



She buys three tins of paint.

One of the tins costs £13.68

The other two tins each cost £8.10

Jenny also buys a pack of paintbrushes.

The pack costs £6.99

Jenny gets $\frac{1}{3}$ off the total cost.

Jenny pays with two £20 notes.

How much change should Jenny get?

£

(Total for Question 7 is 4 marks)



- 8 Sue lives in Sudbury.
She has a meeting in Chelmsford.
She is going to travel on the train that travels from Sudbury to London.

Here is part of the train timetable from Sudbury to London.

Sudbury to London							
Sudbury	05 30	06 30	07 17	08 00	09 00	10 00	11 00
Bures	05 37	06 37	07 24	08 07	09 07	10 07	11 07
Chappel & Wakes Colne	05 43	06 43	07 30	08 13	09 13	10 13	11 13
Marks Tey	05 49	06 49	07 36	08 19	09 19	10 19	11 19
Chelmsford	06 14	07 14	08 09	08 44	09 42	10 39	11 39
London	06 49	07 51	08 48	09 22	10 17	11 18	12 16

It takes Sue 10 minutes to walk from her home to the train station in Sudbury.
It takes Sue 20 minutes to get from the station in Chelmsford to her meeting.

Her meeting starts at 9 30 am.

Plan a schedule for Sue's journey to her meeting in Chelmsford.
You must show the times of all stages of her journey.

(Total for Question 8 is 3 marks)



9 Here are the heights, in metres, that 10 men jumped in a high jump competition.

2.19 2.23 2.23 2.23 2.26 2.28 2.29 2.29 2.31 2.33

(a) For these heights, find

(i) the mode,

..... m

(ii) the mean,

..... m

(iii) the range.

..... m

(4)

In a high jump competition for women, the heights, in metres, that 10 women jumped were recorded.

For these heights

the mean was 1.95 m

the range was 0.18 m

(b) Compare the heights that the men jumped with the heights that the women jumped.

.....

.....

.....

.....

(2)

(Total for Question 9 is 6 marks)



10 The two-way table gives some information about the drinks sold by a cafe on a Saturday and on a Sunday.

	Tea	Coffee	Squash	Total
Saturday	45		37	140
Sunday		47		
Total			87	299

(a) Work out the total number of drinks sold on Sunday.

.....
(1)

(b) Work out the total number of coffees sold on Saturday and Sunday.

.....
(2)

Rob and Mari each buy a drink at the cafe.
The cafe only sells tea, coffee and squash.

(c) Write down all the possible combinations they can choose.

.....
.....
(2)

(Total for Question 10 is 5 marks)

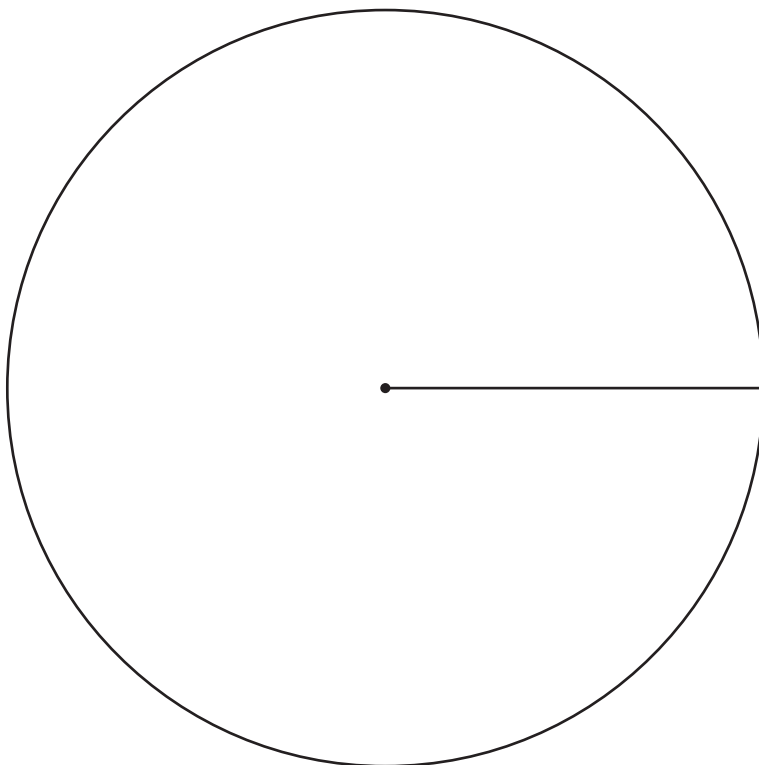


11 Mike asked 60 students to name their favourite fruit.

Here are his results.

Favourite Fruit	Frequency
Apple	18
Banana	23
Orange	9
Pear	10

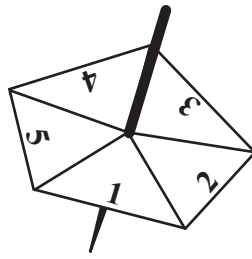
Draw an accurate pie chart for his results.



(Total for Question 11 is 4 marks)



12 Here is a five-sided spinner.



The table shows the probabilities that the spinner will land on 1 or 2 or 3 or 4 or 5

Number	1	2	3	4	5
Probability	0.15	0.20	0.10	0.25	0.30

Pete spins the spinner once.

(a) Work out the probability that the spinner will land on a number greater than 2

.....
(2)

Elinor is going to spin the spinner 200 times.

(b) Work out an estimate for the number of times the spinner will land on 5

.....
(2)

(Total for Question 12 is 4 marks)



***13** Debra and Mark are planning to go on a cruise.
 They can travel with one of two companies, Caribbean Calypso or Royal European.
 The table shows the cost per person to travel with each company.

		Type of cabin			
		Inside	Outside	Balcony	Suite
Cost per person	Caribbean Calypso	£1136	£1319	£1529	£2329
	Royal European	£1043	£1263	£1484	£2147

Caribbean Calypso has a discount of 10% if you book online.
 Royal European has a discount of 5% if you book online.

Debra and Mark are going to book a suite for their cruise.
 They are going to book online.

Debra and Mark want to pay the lowest possible cost.
 Which company should they choose?
 You must show all your working.

(Total for Question 13 is 5 marks)



14 Here are the heights, in cm, of 20 sunflower plants.

73 84 78 96 98 84 101 93 71 104
81 92 95 103 100 96 87 91 88 96

(a) Draw an ordered stem and leaf diagram for these heights.



Key:

(3)

(b) Work out the range.

..... cm

(1)

(c) Find the median height.

..... cm

(1)

(Total for Question 14 is 5 marks)

TOTAL FOR PAPER IS 60 MARKS

