Write your name here

Surname

Other names

Centre Number

Candidate Number

Mathematics B
Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Tuesday 1 March 2011 – Morning
Time: 1 hour 15 minutes

Paper Reference

5MB1F/01

Total Marks

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

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.
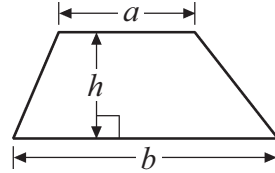- Check your answers if you have time at the end.

Turn over ▶

edexcel
advancing learning, changing lives
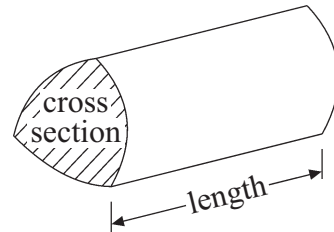
GCSE Mathematics 2MB01

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 × length
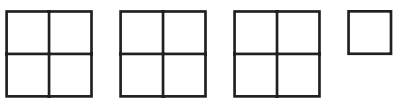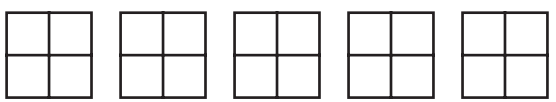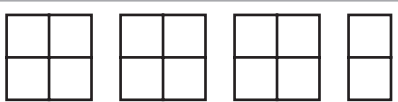
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The pictogram shows the numbers of parcels delivered to some houses on Monday, Tuesday and Wednesday.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key:

represents 8 parcels

(a) Write down the number of parcels delivered on Tuesday.

....
(1)

(b) Write down the number of parcels delivered on Wednesday.

....
(1)

24 parcels were delivered on Thursday.
18 parcels were delivered on Friday.

(c) Use this information to complete the pictogram.

(2)

(Total for Question 1 is 4 marks)

2 (a) How many minutes are there between 8.50 pm and 10.05 pm?

.... minutes

(1)

(b) (i)   Write 15 25 using the 12-hour clock.

....

(ii)   Write 9.15 pm using the 24-hour clock.

....

(2)

Lucy and Saad went to a cafe on the same day.

Lucy was in the cafe from 10.15 am to 10.45 am.
Saad was in the cafe from 10.25 am to 11.05 am.

(c) Work out the number of minutes that Lucy and Saad were in the cafe at the same time.

.... minutes

(2)

(Total for Question 2 is 5 marks)

3 A teacher took some students on an Outdoor Activity trip.
Each student chose one activity to do.

The bar chart shows some information about the activities chosen.

Key: Boys �
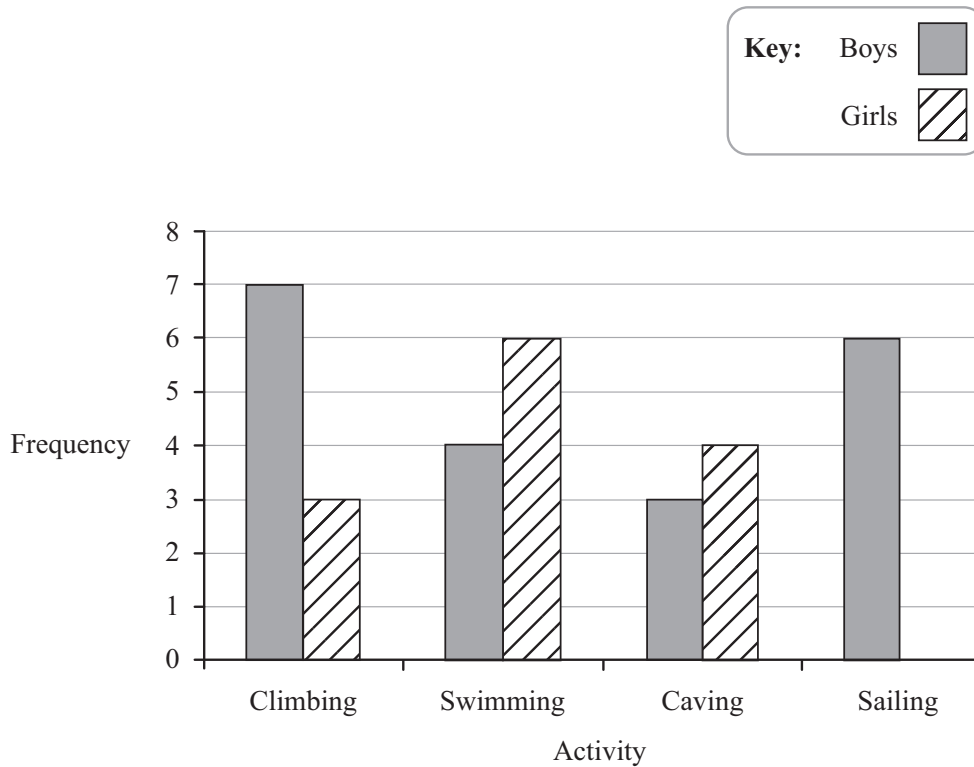
Girls ▨

(a) Which activity did most boys choose?

....

(1)

(b) How many boys went on the Outdoor Activity trip?

....

(2)

7 girls went sailing.

(c) Complete the bar chart.

(1)

(Total for Question 3 is 4 marks)

4 The table shows information about 6 students.

Name	Age in years	Tutor Group	Studying Spanish	Studying French
Callum	16	11A	Yes	No
Seema	16	11B	No	Yes
Mark	15	11B	Yes	Yes
Abby	15	11A	Yes	No
Ben	16	11B	No	Yes
Lori	15	11B	Yes	Yes

(a) Write down the number of students studying Spanish.

....

(1)

(b) Write down the names of the students aged 15 years **and** in Tutor Group 11B.

....

(1)

A student is going to be chosen at random.

(c) Write down the probability that this student is in Tutor Group 11A.

....

(2)

(Total for Question 4 is 4 marks)

5 A bag contains 4 beads.

   2 beads are blue.
   1 bead is red.
   1 bead is yellow.

Connor takes at random a bead from the bag.

(a) On the probability scale, mark with a cross (X) the probability that he takes a blue bead.

0 ————————————————————————— 1
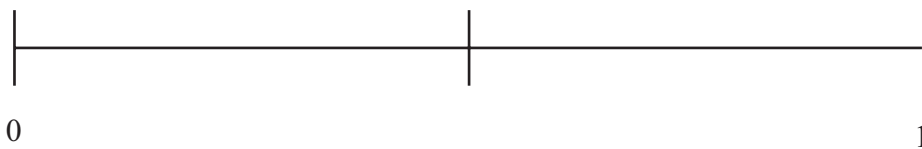
(1)

(b) On the probability scale, mark with a cross (X) the probability that he takes a yellow bead.

0 ————————————————————————— 1
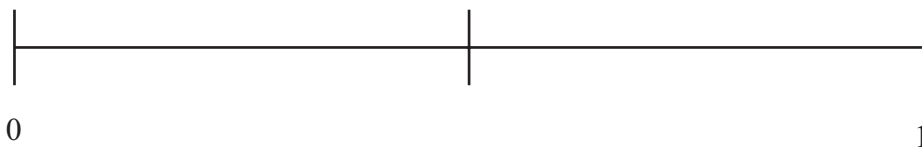
(1)

(c) On the probability scale, mark with a cross (X) the probability that he takes a white bead.

0 ————————————————————————— 1

(1)
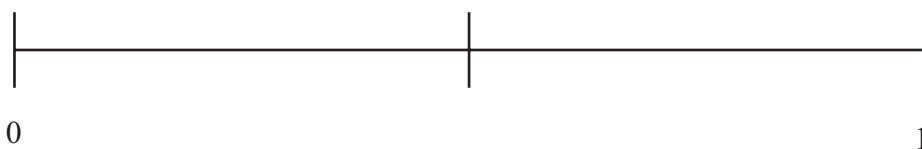
(Total for Question 5 is 3 marks)

6 Callum watched 20 cars go onto a ferry.
He counted the number of people in each car.

Here are his results.

1	3	3	4	1	2	2	3	5	4
2	2	4	5	1	3	2	2	3	2

(a) Complete the frequency table.

Number of people in a car	Tally	Frequency
1		
2		
3		
4		
5		

(2)

(b) Write down the mode.

....

(1)

Fiona counted the number of cars going onto 6 ferries.

Here are her results.

        20   18   23   17   15   21

(c) Calculate the mean number of cars.

....

(2)

(Total for Question 6 is 5 marks)

7   There are 200 people in a cinema.

25% of the people are men.

$\dfrac{1}{5}$ of the people are women.

The rest of the people are children.

Work out how many children are in the cinema.

....

(Total for Question 7 is 3 marks)

8 Glen writes down one letter from the word CAT.

Then he writes down one number from 1, 2, 3 and 4

| C A T | | 1 2 3 4 |

List **all** the possible combinations Glen could write down.

....

....

....

....

(Total for Question 8 is 2 marks)

9 This conversion graph can be used to change between miles and kilometres.
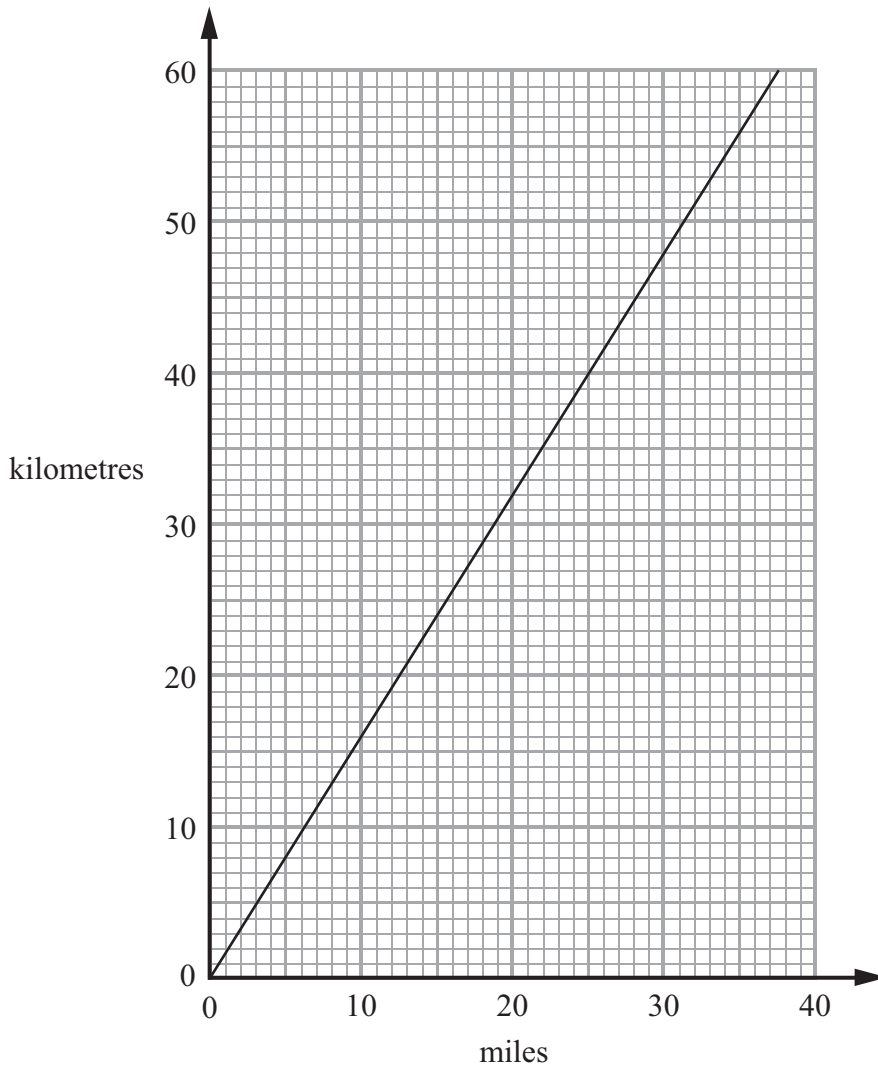
(a) Use the graph to change 30 miles to kilometres.

.... kilometres
(1)

(b) Use the graph to change 40 kilometres to miles.

.... miles
(1)

(c) Change 100 miles to kilometres.

.... kilometres
(2)

(Total for Question 9 is 4 marks)

10 The stem and leaf diagram shows information about the ages, in years, of the people on a fairground ride.

```
0 │ 8   8   9
1 │ 1   2   3   4   4   4   6   7
2 │ 1   2   3   4   5   6   8
3 │ 1   4   8
4 │ 2   3   6   8
5 │ 0   3
```
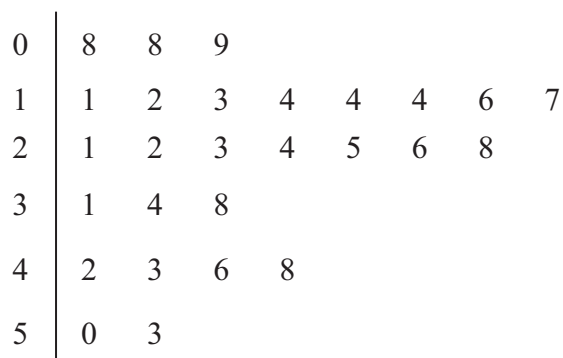
Key: 4│2   means 42 years

(a) How many people were on the fairground ride?

....

(1)

(b) Work out the median age.

....

(1)

(c) Work out the range of the ages.

....

(2)

(Total for Question 10 is 4 marks)

11 The pie charts show some information about the numbers of matches won, drawn and lost by a cricket team and by a hockey team last year.

Cricket Team

Hockey Team

The cricket team won 15 matches.

(a) How many matches did the cricket team lose?

....

(2)

(b) Which team won the most matches last year?
Tick (✓) **one** box to show your answer.

☐   ☐   ☐

Cricket   Hockey   Not enough information

Explain your answer.

....
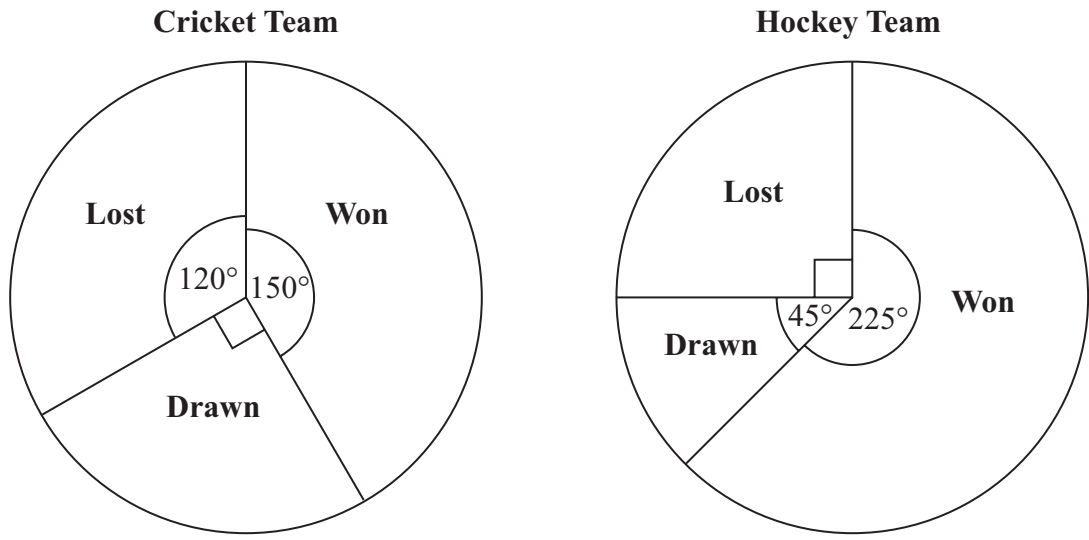
....

....

....

(1)

(Total for Question 11 is 3 marks)

12 A teacher asked 30 students if they had a school lunch or a packed lunch or if they went home for lunch.

   17 of the students were boys.
   4 of the boys had a packed lunch.
   7 girls had a school lunch.
   3 of the 5 students who went home were boys.

Work out the number of students who had a packed lunch.

....

(Total for Question 12 is 4 marks)

13 Jake plays a game of throwing a ball at a target.

The table shows information about the probability of each possible score.

Score	0	1	2	3	4	5
Probability	0.09	x	0.18	0.16	0.21	0.30

Work out the value of x.

....

(Total for Question 13 is 2 marks)

*14 Beth is planning a trip for a group of 36 people.
The group can go to a theme park **or** to a concert.

If they go to the concert, they will go by train.
If they go to the theme park, they will go by coach.

Beth has information about the costs.

Theme Park Ticket Prices
£9 per person
or
£6.50 per person
in a group of 10 or more people

Coach Hire
24 seats   £260
40 seats   £320
54 seats   £410

Concert Ticket Price
£7.50

Return Train Fares
£8.25 each
or
£26.50 for each group of 4 people

What is the least possible total cost of the trip?
You must show all your working.

(Total for Question 14 is 5 marks)

15 A beach cafe sells ice creams.
Each day the manager records the number of hours of sunshine and the number of ice creams sold.

The scatter graph shows this information.
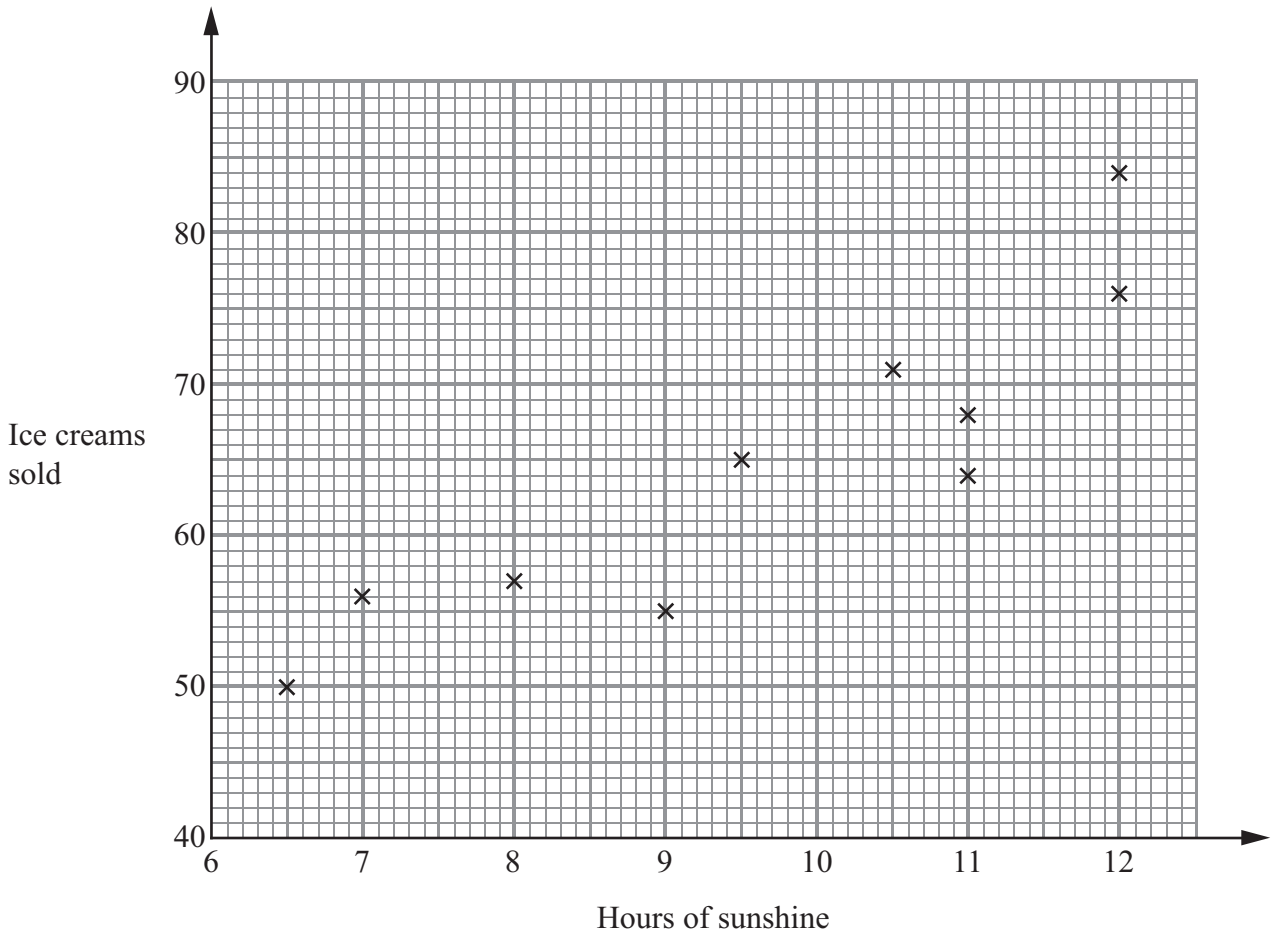
On another day there were 11.5 hours of sunshine and 73 ice creams sold.

(a) Show this information on the scatter graph.

(1)

(b) Describe the relationship between the number of hours of sunshine and the number of ice creams sold.

....

....

(1)

One day had 10 hours of sunshine.

(c) Estimate how many ice creams were sold.

....

(2)

(Total for Question 15 is 4 marks)

16 (a) Dan is doing a survey to find out how much time students spend playing sport.
He is going to ask the first 10 boys on the register for his PE class.

This may **not** produce a good sample for Dan's survey.

Give **two** reasons why.

Reason 1

....

....

....

Reason 2

....

....

....

(2)

(b) Design a suitable question for Dan to use on a questionnaire to find out how much
time students spend playing sport.

(2)

(Total for Question 16 is 4 marks)

TOTAL FOR PAPER IS 60 MARKS

BLANK PAGE