Write your name here

Surname		Other names

Centre Number | Candidate Number

Edexcel GCSE

Mathematics B
Unit 1: Statistics and Probability (Calculator)

Foundation Tier

Monday 11 June 2012 – Afternoon
Time: 1 hour 15 minutes

Paper Reference
5MB1F/01

Total Marks

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

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.
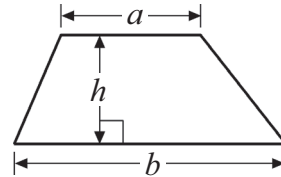
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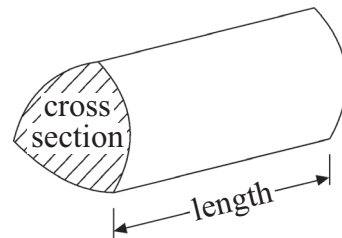**PEARSON**

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

1   The table shows some information about 7 children.

Name	Age (in years)	Eye colour	Pet
Amos	7	Blue	Cat
Tania	8	Green	Rabbit
Gareth	6	Brown	Dog
Carl	7	Green	Cat
Charlie	9	Brown	Hamster
Talil	8	Green	Fish
Mary	....	....	....

Mary is 5 years old.
She has blue eyes and a pet dog.

(a) Use this information to complete the table.

(1)

(b) How many of these children have brown eyes?

....
(1)

(c) Write down the pet of the youngest child who has green eyes.

....
(1)

(Total for Question 1 is 3 marks)

2 The pictogram shows information about the number of text messages Stephanie sent on each of 4 days last week.

Thursday	
Friday	
Saturday	
Sunday	

Key:
▯ represents 12 text messages

(a) Write down the number of text messages Stephanie sent on Sunday.

....
(1)

Stephanie sent more text messages on Saturday than on Friday.

(b) How many more?

....
(2)

It costs Stephanie 8p to send a text message.

(c) Work out the total cost of the text messages she sent on Thursday.

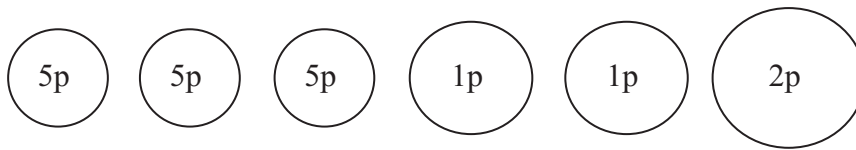£ ....
(3)

(Total for Question 2 is 6 marks)

3 The diagram shows some coins.

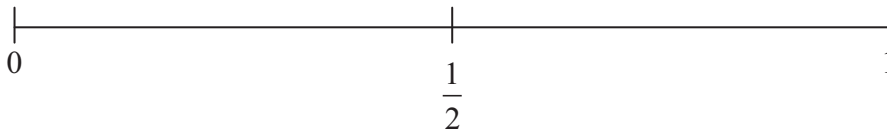$$\left(5p\right) \left(5p\right) \left(5p\right) \left(1p\right) \left(1p\right) \left(2p\right)$$

There are three 5p coins, two 1p coins and one 2p coin.

Yasmin takes at random one of these coins.

(i) Which word best describes the probability that she will take a 20p coin?

impossible   unlikely   evens   likely   certain

....

(ii) On the probability scale, mark with a cross (×) the probability that she will take a 5p coin.

```
|——————————————————|——————————————————|
0                   1                   1
                    ─
                    2
```

(iii) Write down the probability that she will take a 2p coin.

....

(Total for Question 3 is 3 marks)

4 Amanda lives in Hanford.
She wants to go on a shopping trip to Middleton.
She is going to go by train.

Here is part of the train timetable from Hanford to Middleton and from Middleton to Hanford.

Hanford to Middleton						
Hanford	08 05	09 05	09 35	10 05	10 35	11 05
Market Down	08 17	09 17	09 47	10 17	10 47	11 17
Kimble	08 30	09 30	10 00	10 30	11 00	11 30
Treach	08 39	09 39	10 09	10 39	11 09	11 39
Middleton	08 48	09 48	10 18	10 48	11 18	11 48

Middleton to Hanford						
Middleton	13 11	13 42	14 11	14 42	15 11	15 42
Treach	13 20	13 51	14 20	14 51	15 20	15 51
Kimble		14 01		15 01		16 01
Market Down	13 43	14 16	14 42	15 16	15 42	16 16
Hanford	13 53	14 26	14 53	15 26	15 53	16 26

It takes Amanda 5 minutes to walk between her home and Hanford station.
She wants to have at least 4 hours in Middleton.
She wants to get back home by 4 pm that day.

Plan a schedule for Amanda's shopping trip.

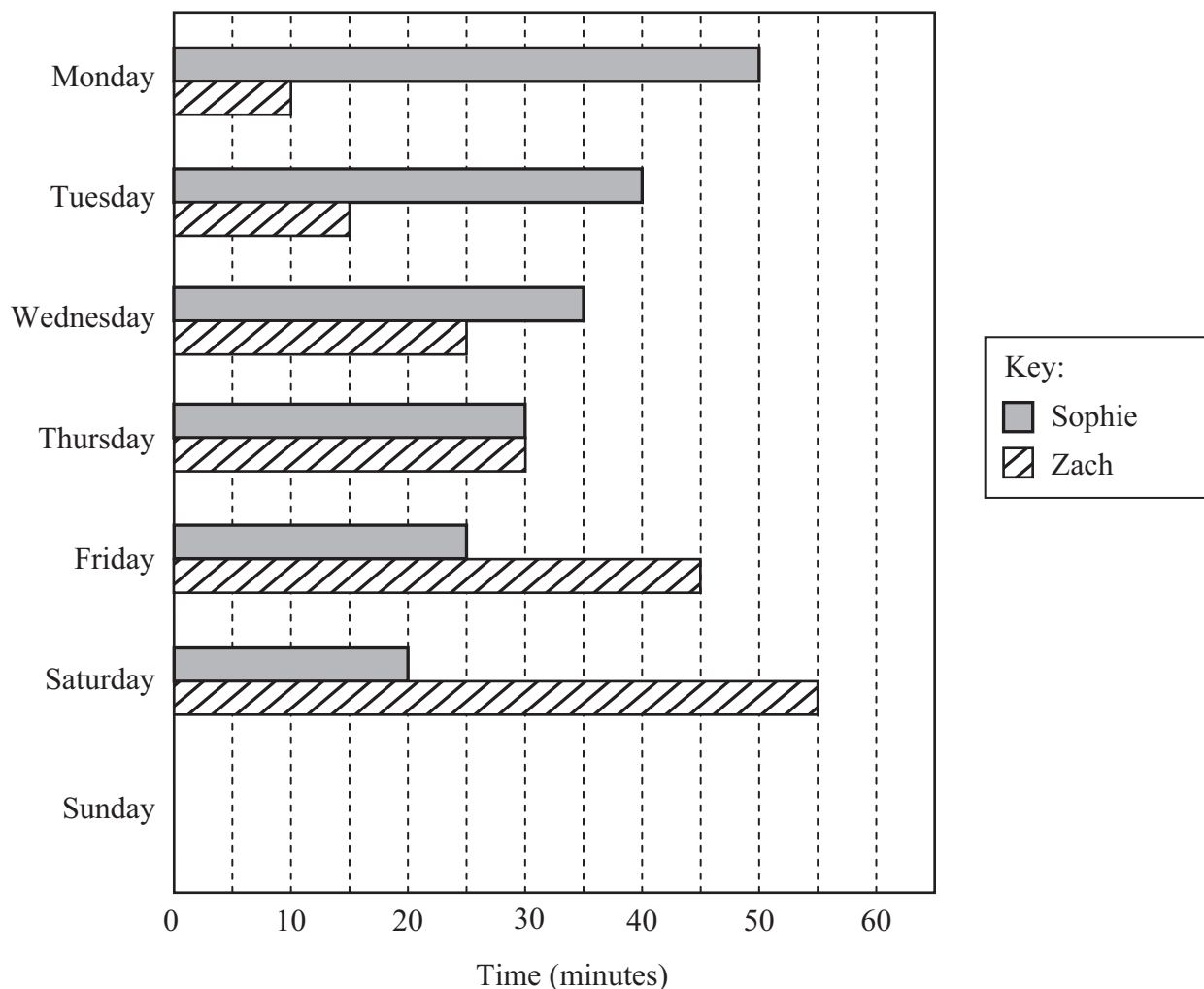|	Start time	Finish time
Home to Hanford station		
Hanford station to Middleton station		
Time in Middleton		
Middleton station to Hanford station		
Hanford station to home		

(Total for Question 4 is 5 marks)

5 The dual bar chart shows information about the amount of time Sophie and Zach spent on the Internet on each of 6 days last week.

On one of these days, Sophie and Zach spent the same amount of time on the Internet.

(a) Which day?

....

(1)

(b) Write down the amount of time that Zach spent on the Internet on Friday.

.... minutes

(1)

On Sunday,
Sophie spent 15 minutes on the Internet,
Zach spent 60 minutes on the Internet.
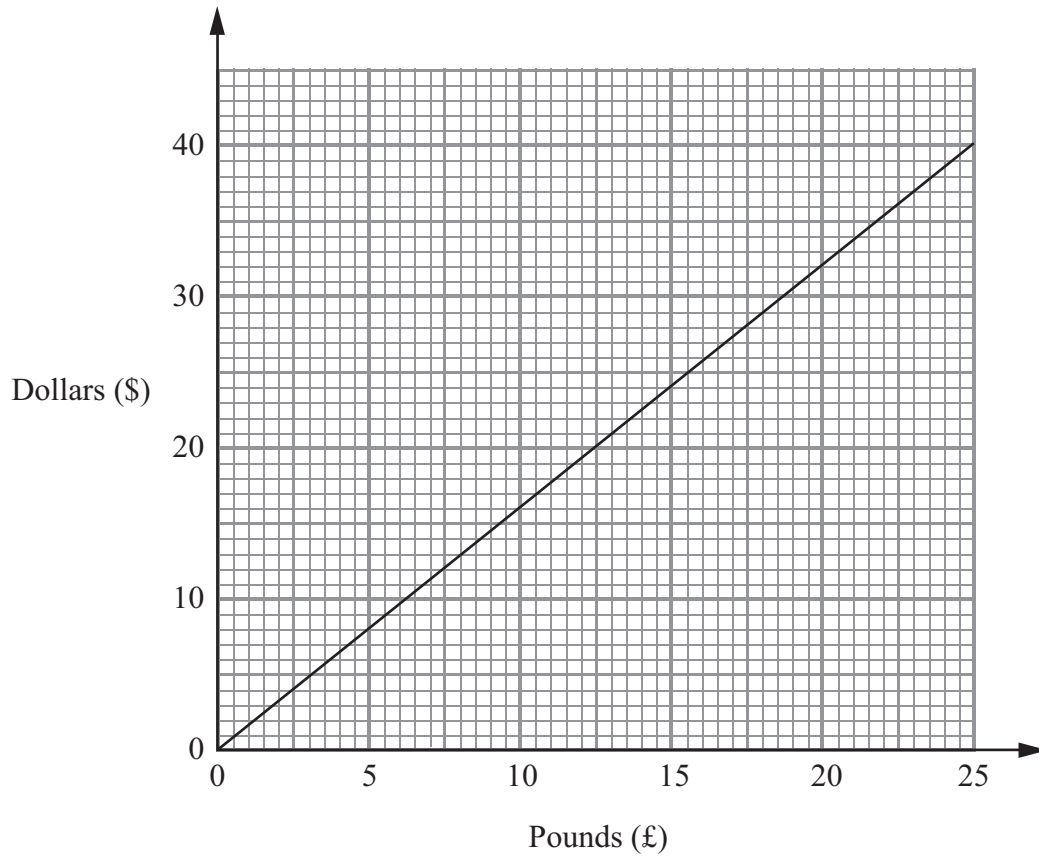
(c) Complete the dual bar chart.

(2)

(d) Using the information in the dual bar chart, compare the amounts of time Sophie spent on the Internet last week to the amounts of time Zach spent on the Internet last week.

....

....

....

(1)

(Total for Question 5 is 5 marks)

*6 You can use this conversion graph to change between pounds (£) and dollars ($).

Dollars ($)

Pounds (£)

Stacey bought a watch in New York.
The watch cost $220

In London, the same type of watch costs £140

Compare the cost of the watch in New York with the cost of the watch in London.

(Total for Question 6 is 4 marks)

7

Single calculator	Pack of three calculators
£3.75	£9

A shop sells calculators.

In the shop,
a single calculator costs £3.75
a pack of three calculators costs £9

Sarah buys 8 of these calculators.
She buys the calculators at the least possible cost.

Sarah pays with two £20 notes.

How much change should she get?

£ ....

(Total for Question 7 is 3 marks)

8 Hestia rolls a dice 24 times.
Here are the scores.

1	2	3	6	4	5	2	1
3	5	6	2	1	2	6	4
2	3	2	4	3	4	3	2

(a) Complete the frequency table.

Score	Tally	Frequency
1		
2		
3		
4		
5		
6		

(2)

(b) Write down the mode of the scores.

....
(1)

(c) Hestia wants to show this information in a suitable diagram or chart.

On the grid, draw a suitable diagram or chart.

(3)
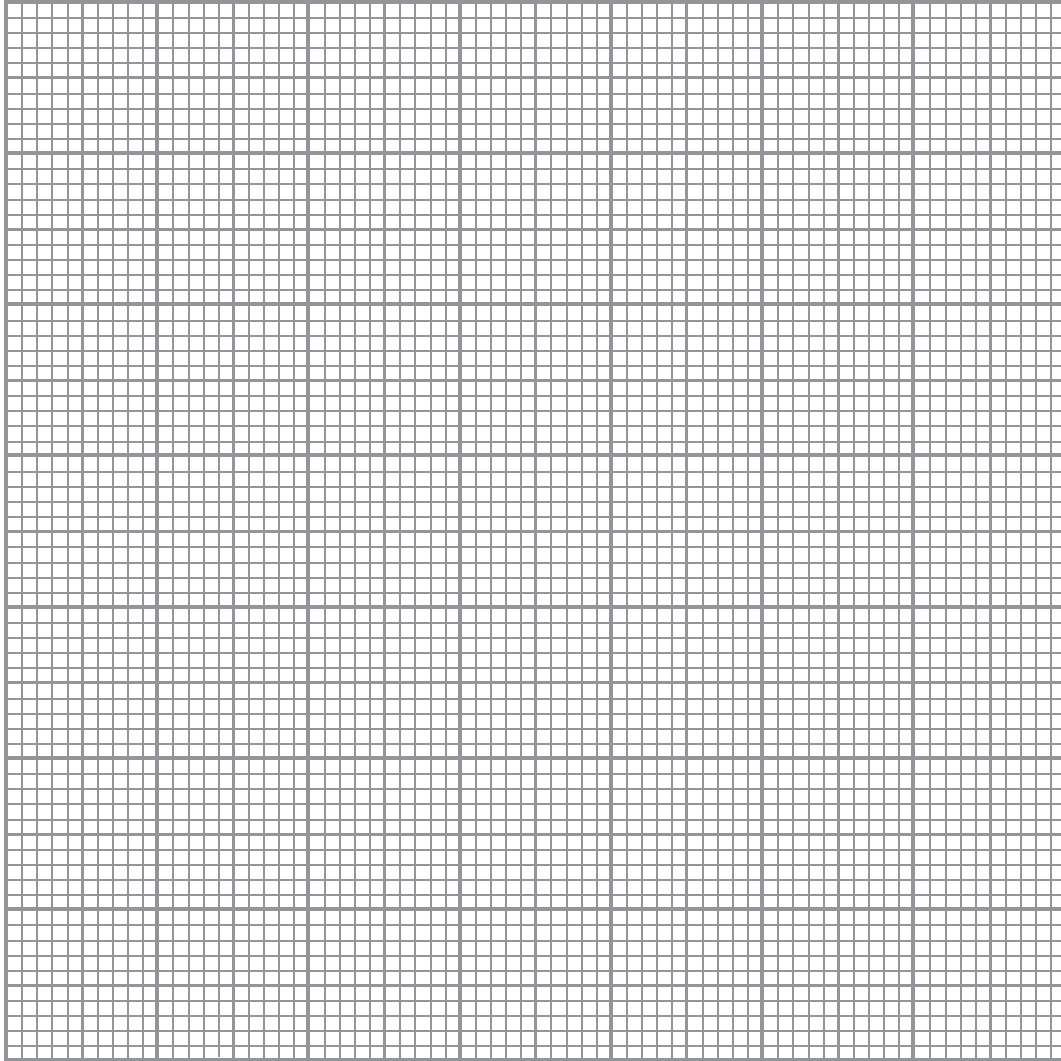
(Total for Question 8 is 6 marks)

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9 The two-way table shows information about the numbers of students on a school trip.

	Year 8	Year 9	Year 10	Total
Girls	15		12	44
Boys		22		
Total			28	100

Complete the two-way table.

(Total for Question 9 is 3 marks)

10 Abigail is *a* years old.
Bob is *b* years old.

Bob is older than Abigail.

(a) Write down, in terms of *a* and *b*, an expression for how many years older Bob is than Abigail.

....
(1)

(b) Write down, in terms of *a* and *b*, an expression for the mean age, in years, of Abigail and Bob.

....
(1)

(Total for Question 10 is 2 marks)

*11 Pete and Sue are going to take their children to France.
They will travel together on the same ferry.
They will travel with one of two ferry companies, Easy Ferry or Seawagon.

The tables give information about the costs for each adult and each child to travel with these ferry companies.

Easy Ferry	July			August		
Date	**1 − 10**	**11 − 21**	**22 − 31**	**1 − 10**	**11 − 21**	**22 − 31**
Adult	£32.00	£36.50	£39.50	£42.25	£42.25	£37.75
Child	£18.00	£20.25	£23.75	£25.85	£25.85	£21.00

Seawagon	July			August		
Date	**1 − 10**	**11 − 21**	**22 − 31**	**1 − 10**	**11 − 21**	**22 − 31**
Adult	£33.50	£37.50	£40.25	£43.85	£44.95	£38.50
Child	£17.25	£19.75	£21.85	£24.65	£23.95	£19.95

Pete and Sue have three children.
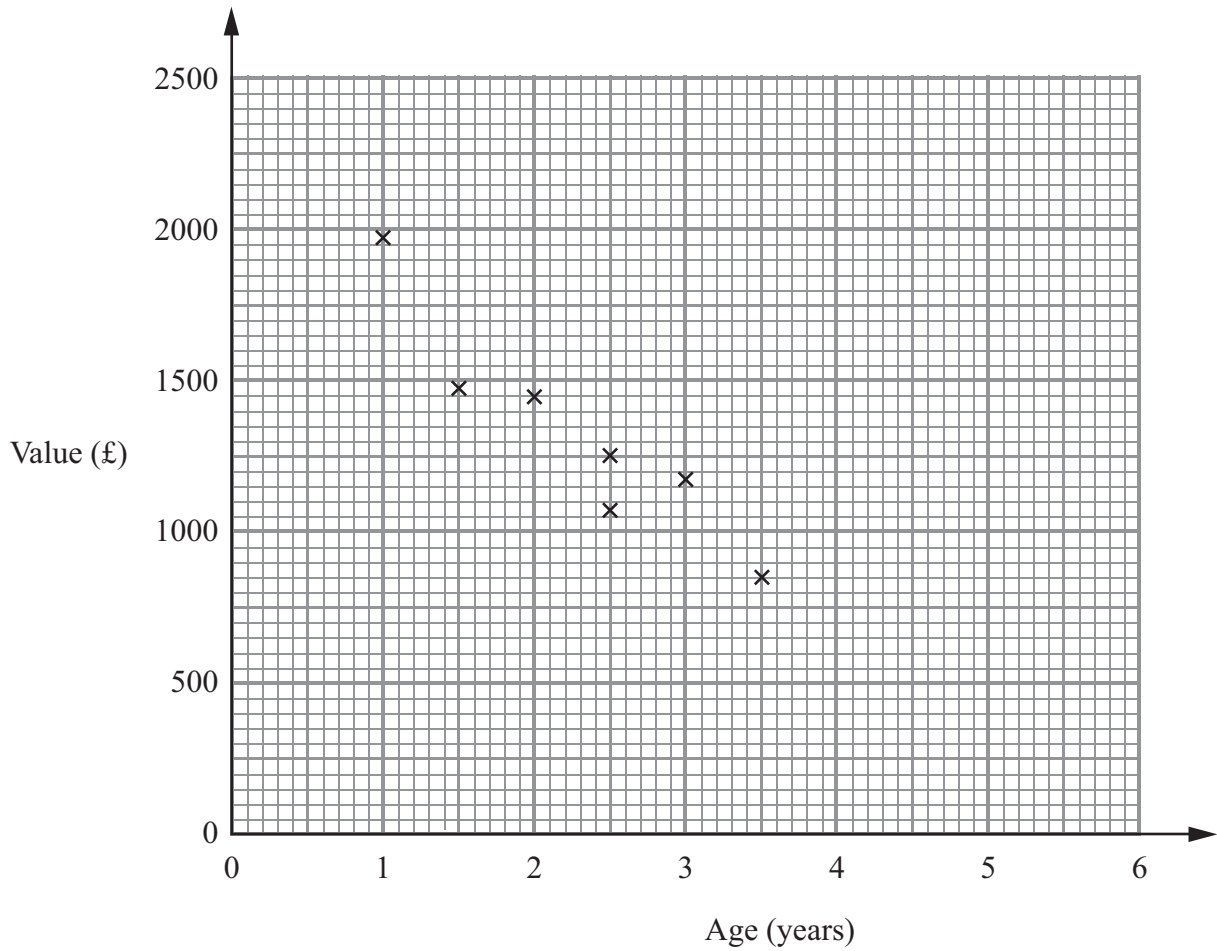They will travel on 25 July.

They will travel with the cheaper ferry company.

Which ferry company?
You must show all your working.

(Total for Question 11 is 4 marks)

12 The scatter graph shows information about the ages and values of seven Varley motor scooters.

Another Varley motor scooter is 5 years old.
It has a value of £300

(a) Show this information on the scatter graph.

(1)

(b) Describe the relationship between the age and the value of Varley motor scooters.

....

....

(1)

A Varley motor scooter is 4 years old.

(c) Estimate its value.

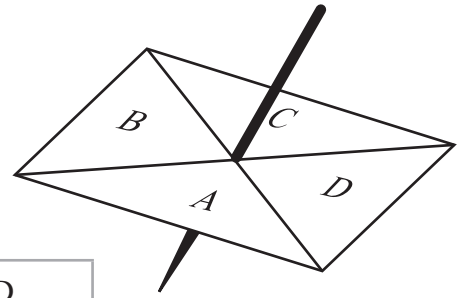£ ....

(2)

(Total for Question 12 is 4 marks)

13 Sandy has a 4-sided spinner.
The sides of the spinner are labelled A, B, C and D.
The spinner is biased.

The table shows the probability that the spinner will land on A or on B or on C.

Side	A	B	C	D
Probability	0.15	0.32	0.27	

(a) Work out the probability that the spinner will land on D.

....
(2)

Sandy spins the spinner 300 times.

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

....
(2)

(Total for Question 13 is 4 marks)

14 Jamal plays 15 games of ten-pin bowling.

Here are his scores.

72	59	75	66	79
75	66	63	89	76
65	79	77	71	83

(a) Draw an ordered stem and leaf diagram to show Jamal's scores.

(3)

Gill plays 15 games of ten-pin bowling.

The table gives some information about her scores.

Highest score	95
Lowest score	75
Mean score	80

*(b) Compare the distribution of Jamal's scores and the distribution of Gill's scores.

(5)

(Total for Question 14 is 8 marks)

TOTAL FOR PAPER IS 60 MARKS

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