

Write your name here

Surname

Other names

Centre Number

Candidate Number

**Edexcel Award**

**Statistical Methods**

**Level 1**

**Calculator allowed**

Wednesday 15 May 2013 – Morning

**Time: 1 hour 30 minutes**

Paper Reference

**AST10/01**

**You must have:**

Pen, HB pencil, eraser, calculator, ruler, protractor.

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  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.



### Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

### 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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**PEARSON**

**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

**1** Julie recorded the colour of each van going past her college one afternoon.

Here are her results.

white	white	silver	blue	white
red	red	blue	red	blue
silver	white	silver	white	blue
white	red	red	red	white

(a) Complete the table for Julie's results.

<b>Colour</b>	<b>Number of vans</b>
white	7
red	6
silver	
blue	

(2)

(b) What was the most common colour of van in her results?

.....  
(1)






(c) Work out the total number of vans.

.....  
(1)

**(Total for Question 1 is 4 marks)**



- 2 The pictogram gives information about the number of rolls Mary baked on each of five days last week.

	Number of rolls
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key:

 represents 40 rolls

- (a) Write down the number of rolls Mary baked on Tuesday.

.....  
(1)

- (b) Work out the number of rolls Mary baked on Wednesday.

.....  
(1)

Mary baked more rolls on Monday than on Friday.

- (c) How many more?

.....  
(2)

(Total for Question 2 is 4 marks)



- 3 Tania is going to sit six tests.  
The incomplete table shows information about these tests.

Test	Time allowed (minutes)	Total number of questions	Total number of marks
English	30	5	20
Geography	25	20	20
German			
History	50	7	25
Mathematics	35	15	15
Science	40	10	20

For the German test

the time allowed is 30 minutes

the total number of questions is 10

the total number of marks is 35

- (a) Use this information to complete the table.

(1)

- (b) Which test has the smallest total number of marks?

.....  
(1)

One of the tests has 20 questions.

- (c) Write down the time allowed for this test.

..... minutes  
(1)

Two of the tests are allowed more time than the mathematics test.

- (d) Which two tests?

.....  
(1)

**(Total for Question 3 is 4 marks)**

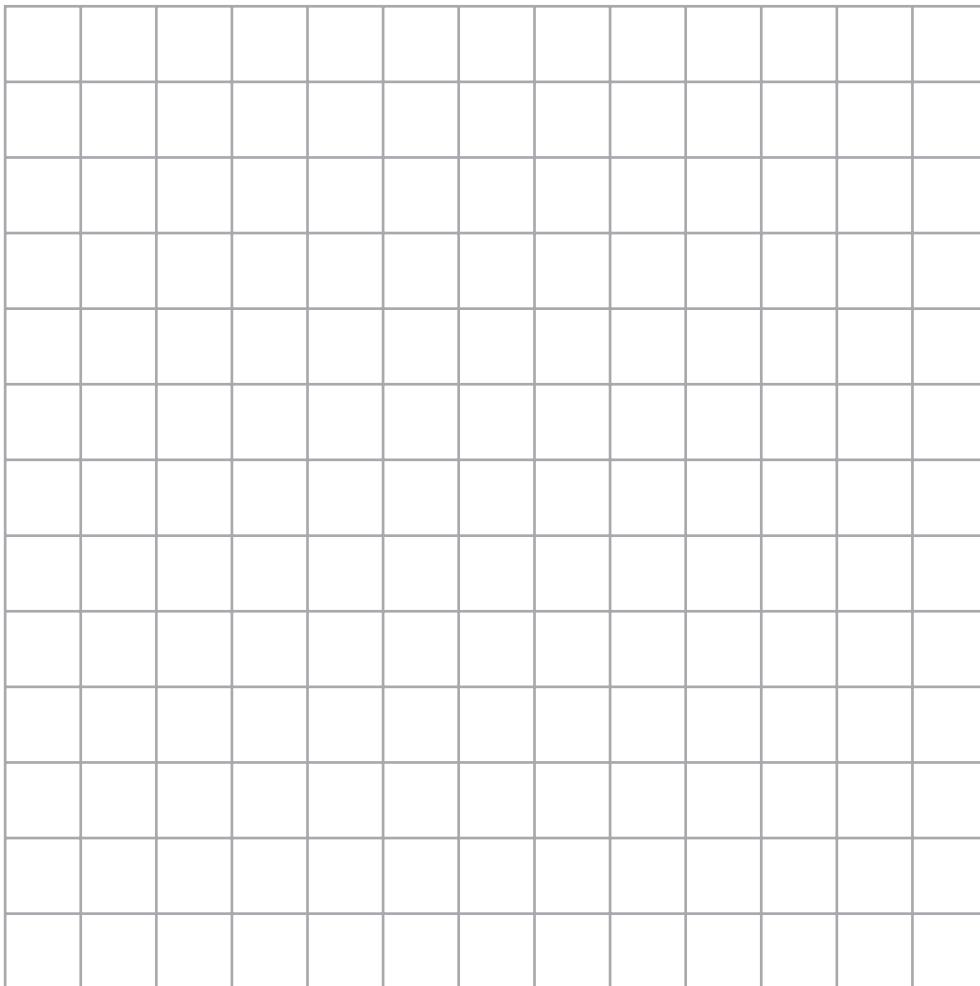


- 4 Harry has some cards.  
Each card has a letter on it.

The table gives information about these cards.

Letter on card	Number of cards
A	12
B	8
C	5
D	9

Draw a bar chart to show the information in the table.



(Total for Question 4 is 3 marks)



5 Fiona spins an ordinary fair coin.

(a) Draw a circle around the word which best describes the probability that the coin will land on heads.

impossible      unlikely      evens      likely      certain

(1)

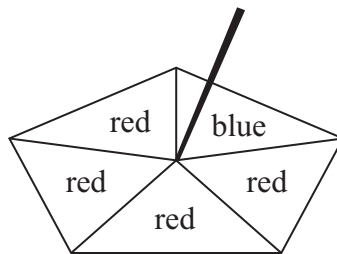
Josh rolls an ordinary fair dice.

(b) Draw a circle around the word which best describes the probability that the dice will land on a 6

impossible      unlikely      evens      likely      certain

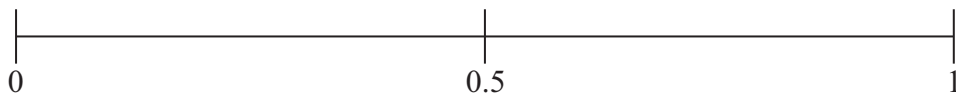
(1)

Here is a fair 5-sided spinner.



Kim spins the spinner.

(c) (i) On the probability scale, mark with a cross (×), the probability that the spinner will land on red.



(ii) Write down the probability that the spinner will land on green.

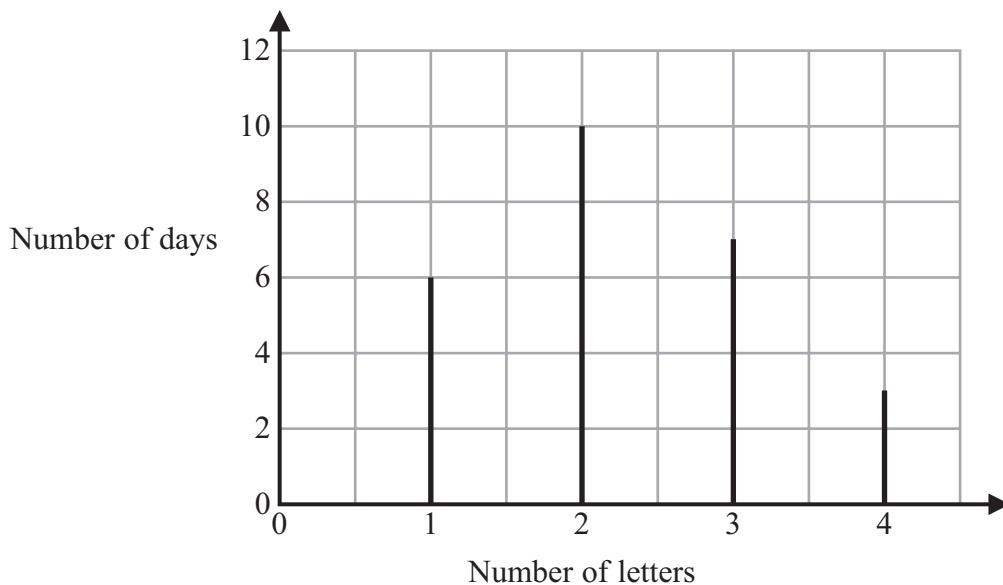
.....  
(2)

**(Total for Question 5 is 4 marks)**



6 Bjorn recorded the number of letters he got each day for a period of time.

The graph gives some information about his results.



(a) For how many days did Bjorn record the number of letters he got?

.....  
(2)

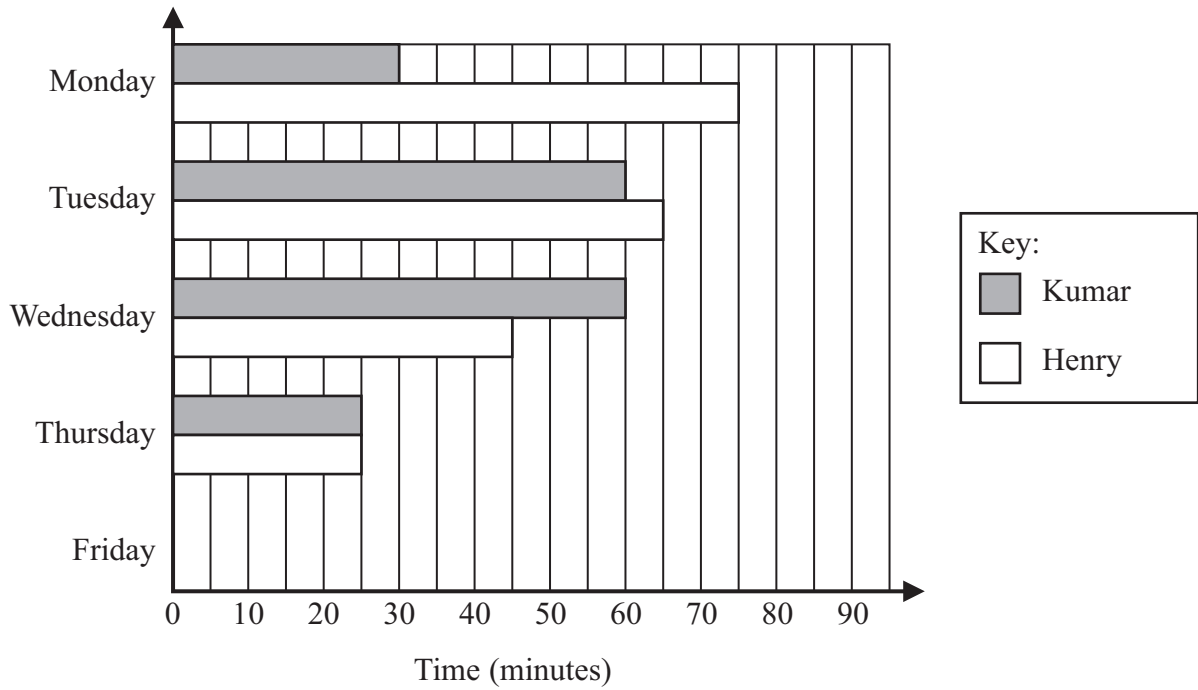
(b) Work out the total number of letters Bjorn got during this period of time.

.....  
(2)

**(Total for Question 6 is 4 marks)**



7 The dual bar chart gives information about the amount of time Kumar and Henry each spent playing a guitar on each of four days last week.



(a) Write down the amount of time Kumar spent playing a guitar on Monday.

..... minutes  
(1)

On one of the days, Kumar and Henry spent the same amount of time playing a guitar.

(b) On which day?

.....  
(1)

On Friday,

Kumar spent 15 minutes playing a guitar

Henry spent 10 minutes playing a guitar

(c) Use this information to complete the bar chart.

(2)

**(Total for Question 7 is 4 marks)**





- 8 Paul goes to a restaurant.  
He can choose from 3 types of soup and from 3 types of bread.

Soup	Bread
Mushroom	White
Tomato	Brown
Vegetable	Granary

Paul is going to choose one soup and one bread.

- (a) List all the possible combinations Paul can choose.  
One has been done for you.

(M, W) .....

.....

.....

(2)

Paul chooses at random a soup.

- (b) Write down the probability that he will choose mushroom soup.

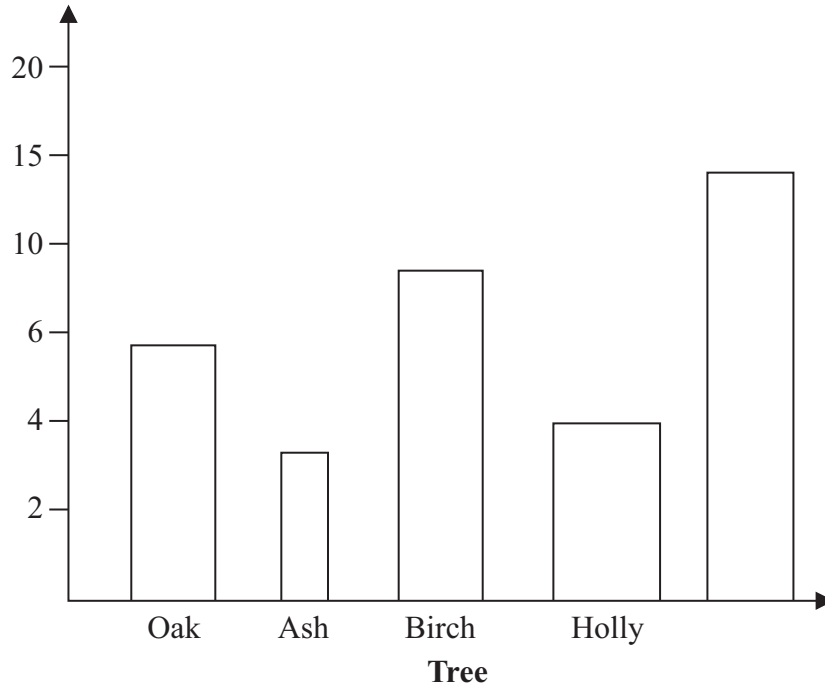
.....

(1)

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



9



The bar chart shows information about the trees in a forest.

Write down **three** things that could be misleading or wrong with the bar chart.

- 1 .....
- 2 .....
- 3 .....

(Total for Question 9 is 3 marks)



10 Benny recorded the shoe size of each of the boys in his class.

Here are the shoe sizes of the boys.

6 7 8 6 7 8 6 11 9 10

(a) Work out the mean shoe size.

.....  
(2)

(b) Find the range.

.....  
(2)

For the shoe sizes of the girls in his class

the mean is 6.2

the range is 4

(c) Compare the shoe sizes of the boys and the shoe sizes of the girls.

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

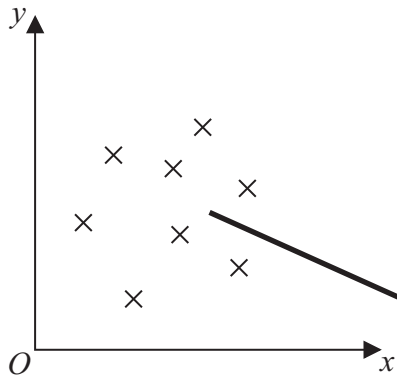
**(Total for Question 10 is 6 marks)**



11 Here are some scatter graphs.

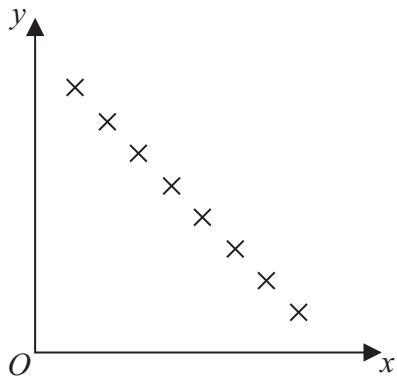
Draw an arrow from each scatter graph to the words that best describe the correlation shown in the scatter graph.

The first one has been done for you.



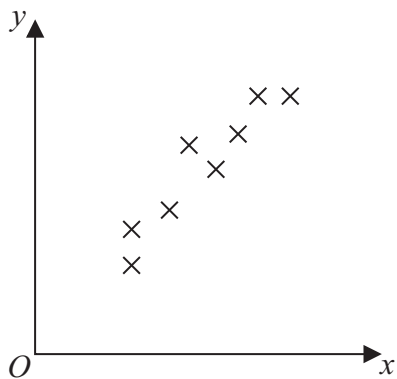
Perfect positive correlation

No correlation



Positive correlation

Negative correlation

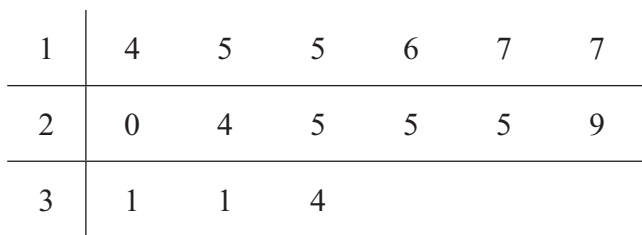


Perfect negative correlation

(Total for Question 11 is 2 marks)



12 The stem and leaf diagram gives information about the lengths, in metres, of some bridges.



Key:

1 | 4 represents 14 metres

(a) Write down the mode of the lengths of the bridges.

..... m

(1)

(b) Work out the range.

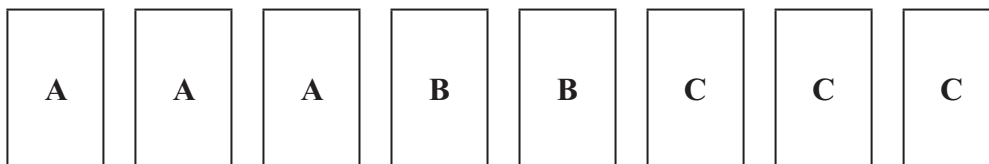
..... m

(2)

(Total for Question 12 is 3 marks)

13 Here are some tiles.

Each tile has a letter on it.



Jeremy is going to take at random one of the tiles.

(a) Write down the probability that the tile he takes will have a C on it.

.....  
(2)

(b) Write down the probability that the tile he takes will **not** have an A on it.

.....  
(2)

(Total for Question 13 is 4 marks)



P 4 3 6 1 9 A 0 1 3 2 0

14 Here are the ages, in years, of 24 films.

1      4      2      4      5      2      6      6  
 9      1      2      3      8      5      4      15  
 6      4      1      7      10      6      5      7

(a) Use this information to complete the table.

Age (years)	Tally	Frequency
1 – 3		
4 – 6		
7 – 9		
10 or more		

(3)

(b) Which age group has the lowest frequency?

.....years

(1)

50 children were asked which of three films they liked the best.

Some information about the results is shown in the two-way table.

	Aladdin	Snow White	Bambi	Total
Boys	15		7	
Girls		4		23
Total	21			50

(c) Complete the two-way table.

(3)

One of the children is picked at random.

(d) Write down the probability that this child will be

(i) a girl

.....

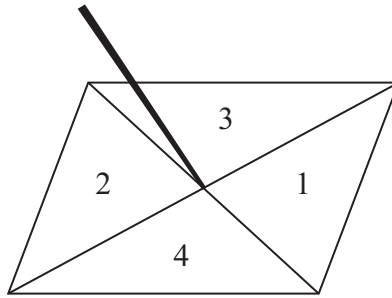
(ii) a boy who liked Aladdin the best.

(3)

(Total for Question 14 is 10 marks)



- 15 Here is a 4-sided spinner.  
The spinner is biased.



Carl spins the spinner.

The table gives the probabilities that the spinner will land on 1, or on 2, or on 3

<b>Number</b>	1	2	3	4
<b>Probability</b>	0.20	0.25	0.15	

- (a) Work out the probability that the spinner will land on 4

.....  
(2)

- (b) Work out the probability that the spinner will **not** land on 1 or on 2

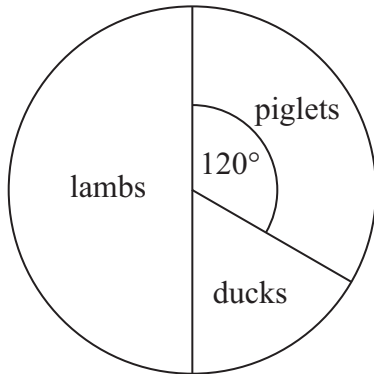
.....  
(2)

**(Total for Question 15 is 4 marks)**

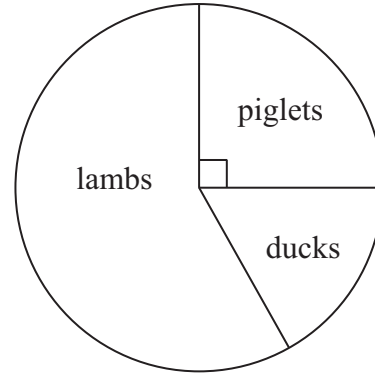


16 Some children were asked to name which animal they like the best from piglets, lambs and ducks.

The pie charts give information about the results for the boys and the results for the girls.



**Boys**



**Girls**

One of the boys is picked at random.

(a) Write down the probability that this boy likes lambs the best.

.....  
(1)

One of the girls is picked at random.

(b) Write down the probability that this girl likes piglets the best.

.....  
(1)

In total, 60 boys and 60 girls were asked which animal they like the best.

(c) Work out the total number of children who like piglets the best.

.....  
(3)

**(Total for Question 16 is 5 marks)**





17 Henrietta and Gary have a coin.

The coin is biased.

Henrietta and Gary each want to find an estimate for the probability that when they spin the coin it will land on heads.

Henrietta spins the coin 10 times.

It lands on heads 6 times.

Gary spins the coin 100 times.

It lands on heads 73 times.

(a) Write down the best estimate for the probability that the next time the coin is spun it will land on heads.

.....  
(1)

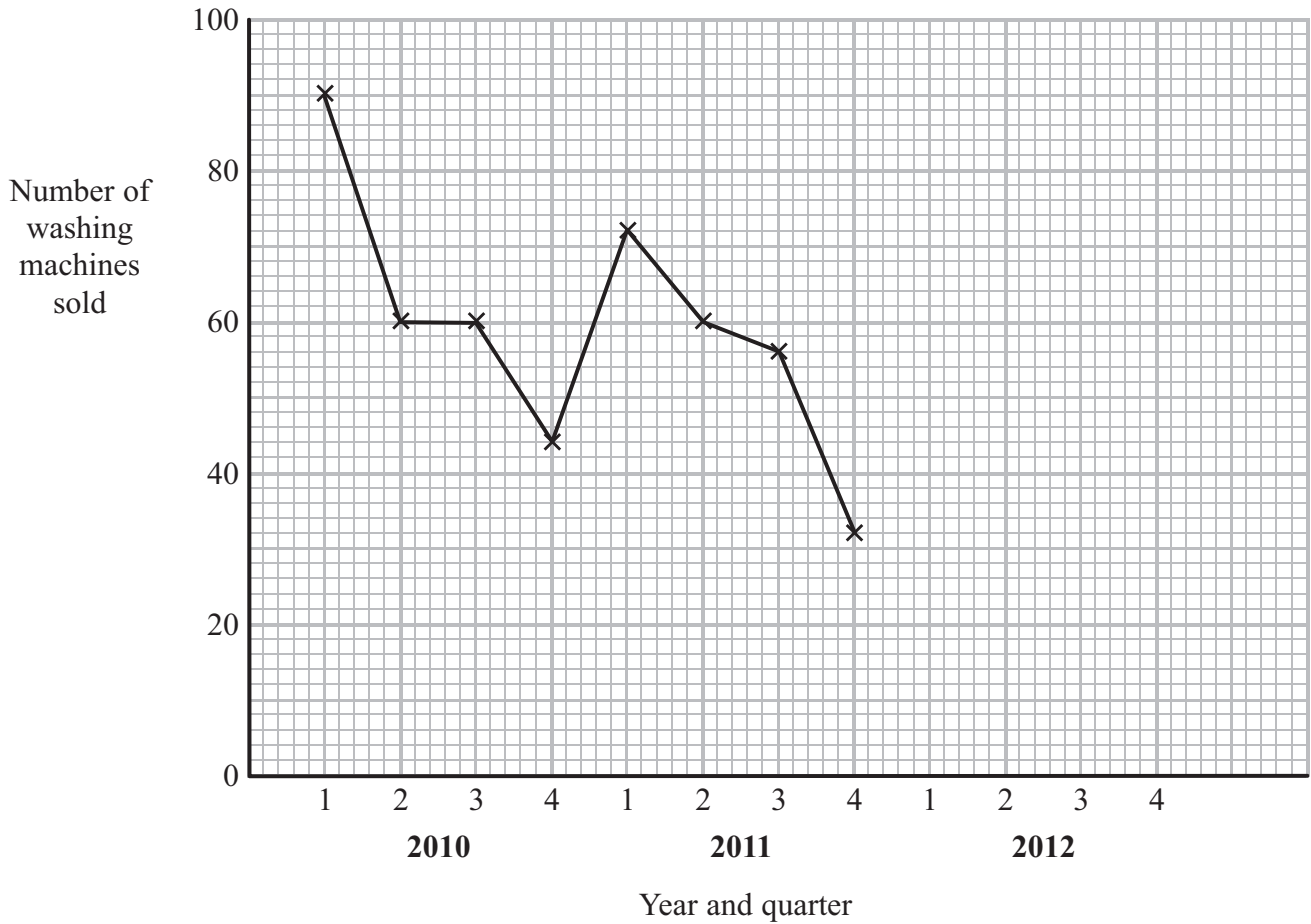
(b) What must Gary and Henrietta do to get a better estimate?

.....  
.....  
(1)

**(Total for Question 17 is 2 marks)**



18 The time series graph gives some information about the number of washing machines sold in a shop in each quarter of 2010 and 2011



(a) Write down the number of washing machines sold in quarter 1 of 2011

.....  
(1)

The table gives the number of washing machines sold in the shop in each quarter in 2012

Year	2012			
Quarter	1	2	3	4
Number of washing machines	60	50	45	22

(b) Show this information on the time series graph.

(2)

(c) Describe the trend in the number of washing machines sold in the shop from 2010 to 2012

.....  
(1)

(Total for Question 18 is 4 marks)

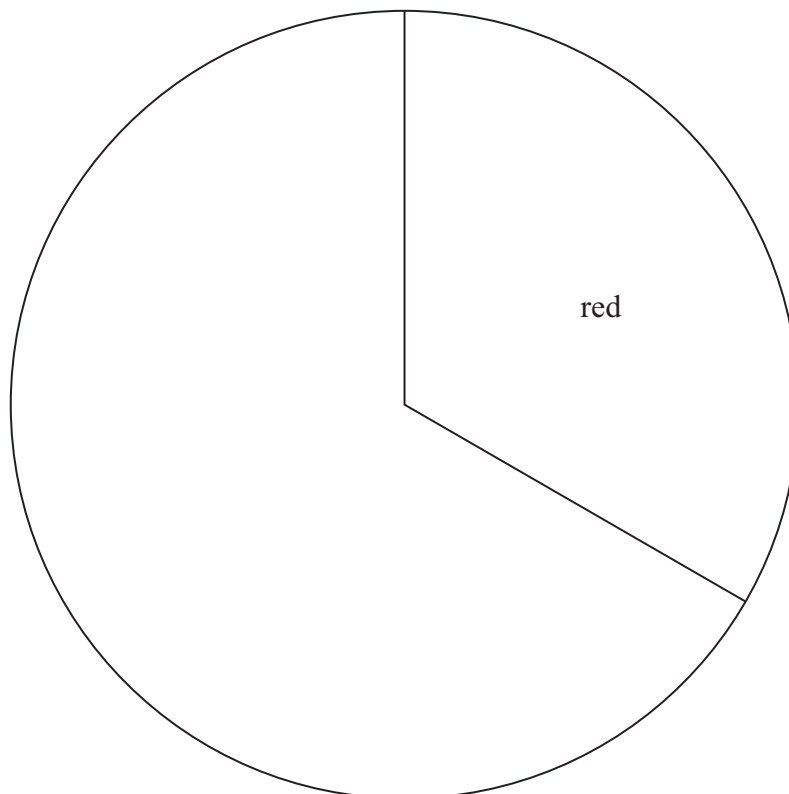


- 19** There are 30 sweets in a tube.  
Each sweet is red or green or yellow or orange.

The table gives information about the number of sweets of each colour in the tube.

Colour	Number of sweets	Angle in pie chart
red	10	120°
green	5	
yellow	6	
orange	9	

Complete the pie chart to show this information.



(Total for Question 19 is 3 marks)



**20** Jai wants to find out the number of times people go to the cinema.

He asks this question in a questionnaire.

How many times do you go to the cinema?	
<input type="checkbox"/> 1 – 2	<input type="checkbox"/> 3 – 4
<input type="checkbox"/> 2 – 3	<input type="checkbox"/> 5 or more

Write down **two** things that are wrong with this question.

.....

.....

**(Total for Question 20 is 2 marks)**

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**21** Charles is planning a party.

He wants to find out the types of crisps people like to eat.

Design a suitable data collection sheet he could use to collect this information.

**(Total for Question 21 is 2 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**

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