Write your name here

Surname	Other names

Pearson Edexcel Award

Centre Number | | | | | |

Candidate Number | | | | |

Statistical Methods

Level 1
Calculator allowed

Monday 13 January 2014 – Afternoon
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 π button, take the value of π 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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5/5/5/

P 4 4 2 3 9 A 0 1 2 0

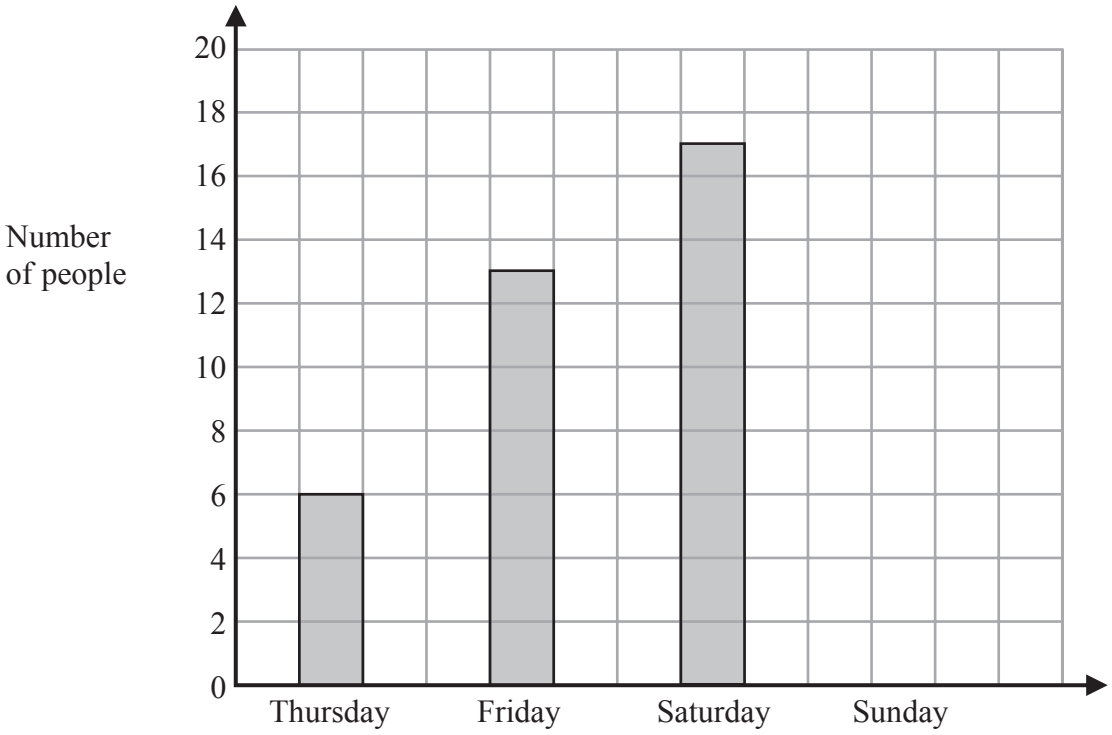
PEARSON

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The bar chart gives some information about the number of people visiting a museum on Thursday, on Friday and on Saturday last week.



(a) Write down the number of people visiting the museum on Thursday.

.....

(1)

17 people visited the museum on one of these days.

(b) Which day?

.....

(1)

On Sunday, 10 people visited the museum.

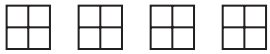
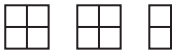
(c) Represent this information in the bar chart.

(1)

(Total for Question 1 is 3 marks)

2 Patrick, Esther, Susan and Jose sell stamps in a supermarket.

The incomplete pictogram shows the number of stamps Esther, Susan and Jose each sold last Tuesday.

	Number of stamps sold
Patrick	
Esther	
Susan	
Jose	

Key:
 represents 12 stamps

Patrick sold 24 stamps on Tuesday.

(a) Complete the pictogram.

(1)

(b) Work out the number of stamps Esther sold.

.....

(1)

Jose sold more stamps than Susan.

(c) How many more?

.....

(2)

(Total for Question 2 is 4 marks)

3 Here is a list of words.

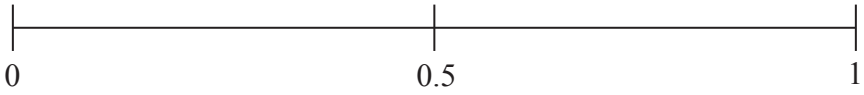
impossible unlikely evens likely certain

(a) Write down the word from the list which best describes the likelihood that a man will grow to be 4 metres tall.

.....

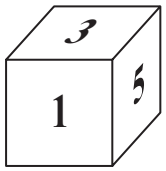
(1)

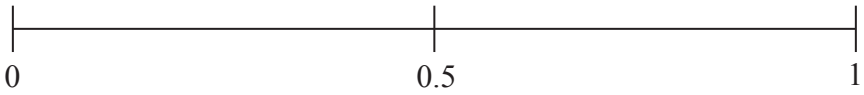
(b) On the probability scale, mark with a cross (×) the probability of an event that is likely to happen.



(1)

(c) On the probability scale, mark with a cross (×) the probability that when a fair dice is rolled it will land on a 3





(1)

Graham has a red tie and a blue tie.

He is going to pick at random one of these ties.

(d) Write down the probability that Graham will pick the blue tie.

.....

(1)

(Total for Question 3 is 4 marks)

4 Jason did a survey to find out which flavour of sweet people like the best.

Here are his results.

lemon	lime	lime	orange	blackberry
orange	blackberry	lime	lime	lemon
blackberry	lime	orange	lime	lime
lime	blackberry	lemon	blackberry	lime

(a) Write down the total number of the people in the survey.

.....

(1)

(b) How many people like orange flavour sweet the best?

.....

(1)

(c) Find which flavour of sweet is recorded the most.

.....

(1)

(Total for Question 4 is 3 marks)

5 The table shows some information about seven cars.

Make of car	Years old	Engine size (in litres)	Number of previous owners
Mercedes	5	2.8	2
Nissan	8	1.3	2
BMW	10	2.2	4
Volvo	5	2.4	1
Skoda	6	1.4	2
Mazda	7	1.8	3
Ford	5	1.6	2

(a) Write down the engine size of the Mazda.

..... litres

(1)

One of these cars has the smallest engine size.

(b) Write down the make of this car.

.....

(1)

Two of these cars are 5 years old and have 2 previous owners.

(c) Write down the names of these two cars.

..... and .....

(1)

(d) Find the median engine size of the seven cars.

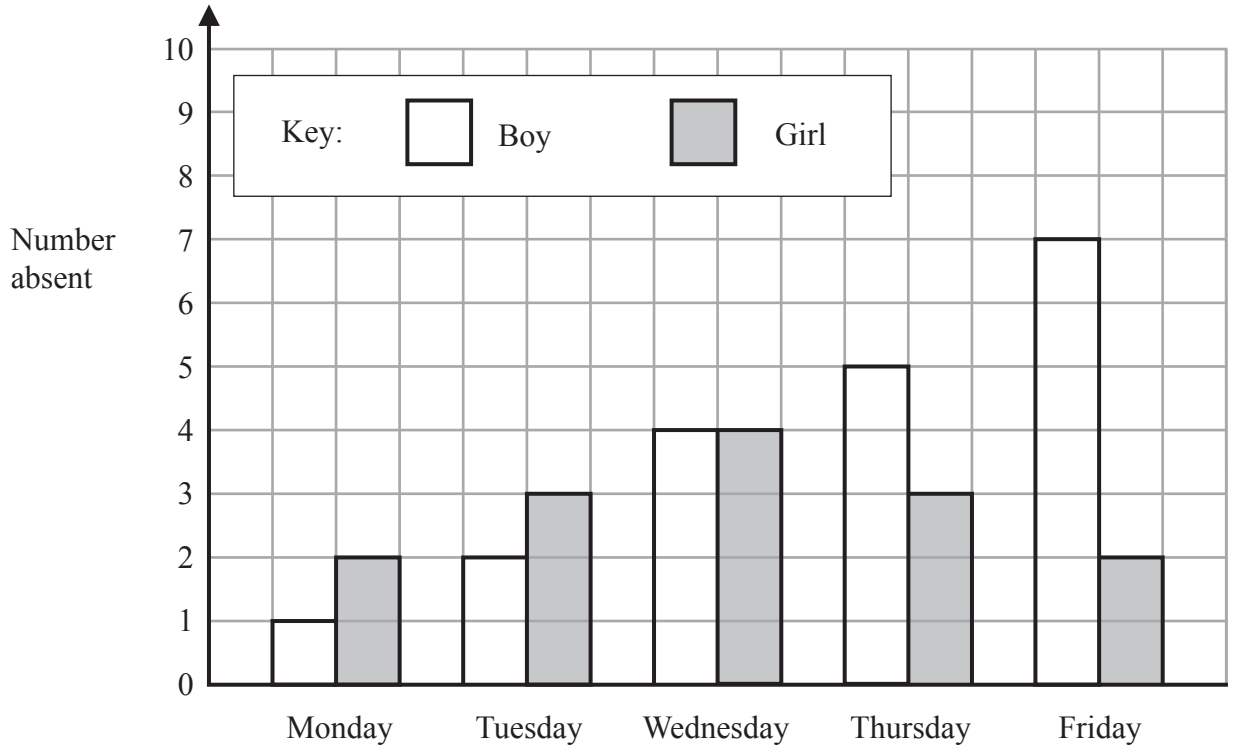
.....litres

(2)

(Total for Question 5 is 5 marks)

6 Mr Singh recorded the number of students absent each day last week.

The dual bar chart gives information about his results.



There were more boys absent than girls on Friday.

(a) How many more?

.....

(1)

(b) Work out the total number of recorded absences for girls last week.

.....

(2)

(c) Write down two comparisons between the numbers of recorded absences for boys and the numbers of recorded absences for girls last week.

.....

.....

.....

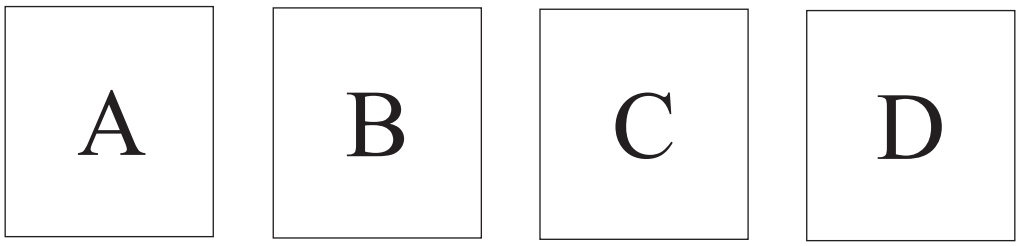
.....

(2)

(Total for Question 6 is 5 marks)

7 Here are 4 cards.

One card is marked A, one card is marked B, one card is marked C and one card is marked D.



Tina is going to take two of these cards.

Write down all the possible combinations she can get.
One has been done for you.

(A, B) .....

.....

(Total for Question 7 is 2 marks)

8 A weatherman says

'The probability that it will rain tomorrow is 65%'.

According to the weatherman, what is the probability that it will **not** rain tomorrow?

.....%

(Total for Question 8 is 2 marks)

9 Kumar is going to roll a dice a number of times.
He wants to record the results on a data collection sheet.

(a) Design a suitable data collection sheet for Kumar to use.

(3)

Kumar rolls the dice ten times.
In these ten rolls, the dice does not land on a 6

Kumar says 'This dice is biased.'

Kumar may be wrong.

(b) Explain why.

.....

.....

(1)

(Total for Question 9 is 4 marks)

10 A rugby team played 10 games in 2012.

Here is the number of points they scored in each game.

3 5 8 8 15 15 18 21 26 30

(a) Work out the range.

.....

(2)

(b) Work out the mean number of points scored.

.....

(2)

In 2013,

the rugby team played 10 games,
the mean number of points scored is 18.5

(c) Compare the total number of points scored in 2012 and the total number of points scored in 2013.

.....

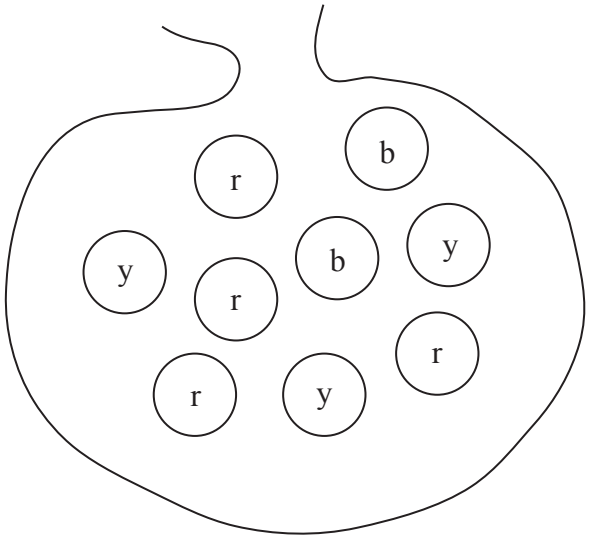
.....

(2)

(Total for Question 10 is 6 marks)

11 A bag contains

3 yellow counters,
2 blue counters,
4 red counters.



Jeff takes a counter at random from the bag.

(a) Write down the probability that the counter will be red.

.....

(2)

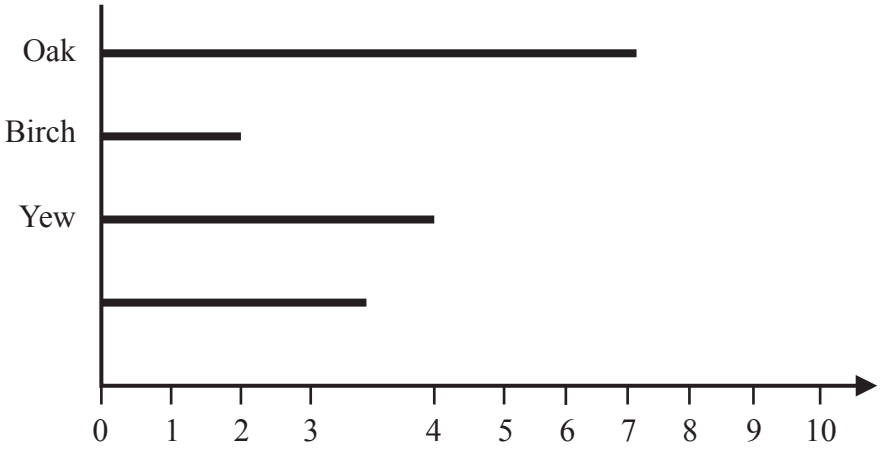
(b) Write down the probability that the counter will be yellow or blue or red.

.....

(1)

(Total for Question 11 is 3 marks)

12 The graph shows information about the trees in a wood.



Write down **three** things that are wrong or could be misleading with the graph.

1 .....

.....

2 .....

.....

3 .....

.....

(Total for Question 12 is 3 marks)

13 A doctor recorded the number of different patients with flu each day last month.

Here are her results.

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

Number of patients	Tally	Frequency
1		
2		
3		
4		

(a) Complete the frequency table for this information.

(2)

(b) Write down the modal number of patients.

.....

(1)

(c) Work out the total number of patients with flu last month.

.....

(2)

(Total for Question 13 is 5 marks)

14 Yura has a coin.
The coin is biased.

Yura spins the coin 50 times.
The coin lands on Heads 17 times.

Write down an estimate for the probability that the next time Yura spins the coin it will land on Heads.

.....

(Total for Question 14 is 1 mark)

---

15 130 people had one drink each.
The drink was orange or lemonade or milk.

The two-way table gives information about these people and their drink.

	orange	**lemonade**	**milk**	**Total**
male		17	19	
female	24		30	
Total	39			130

(a) Write down the number of females who had an orange drink.

.....

(1)

(b) Complete the two-way table.

(3)

One of these people is picked at random.

(c) (i) Write down the probability that the person picked had an orange drink.

.....

(ii) Write down the probability that the person picked is a male who had a milk drink.

.....

(2)

(Total for Question 15 is 6 marks)

---

16 Nikul wants to find out how many times people go the dentist.

He uses this question on a questionnaire.

How many times do you go to the dentist?

☐ 1 – 2

☐ 3 – 4

☐ more than 5

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

1 .....

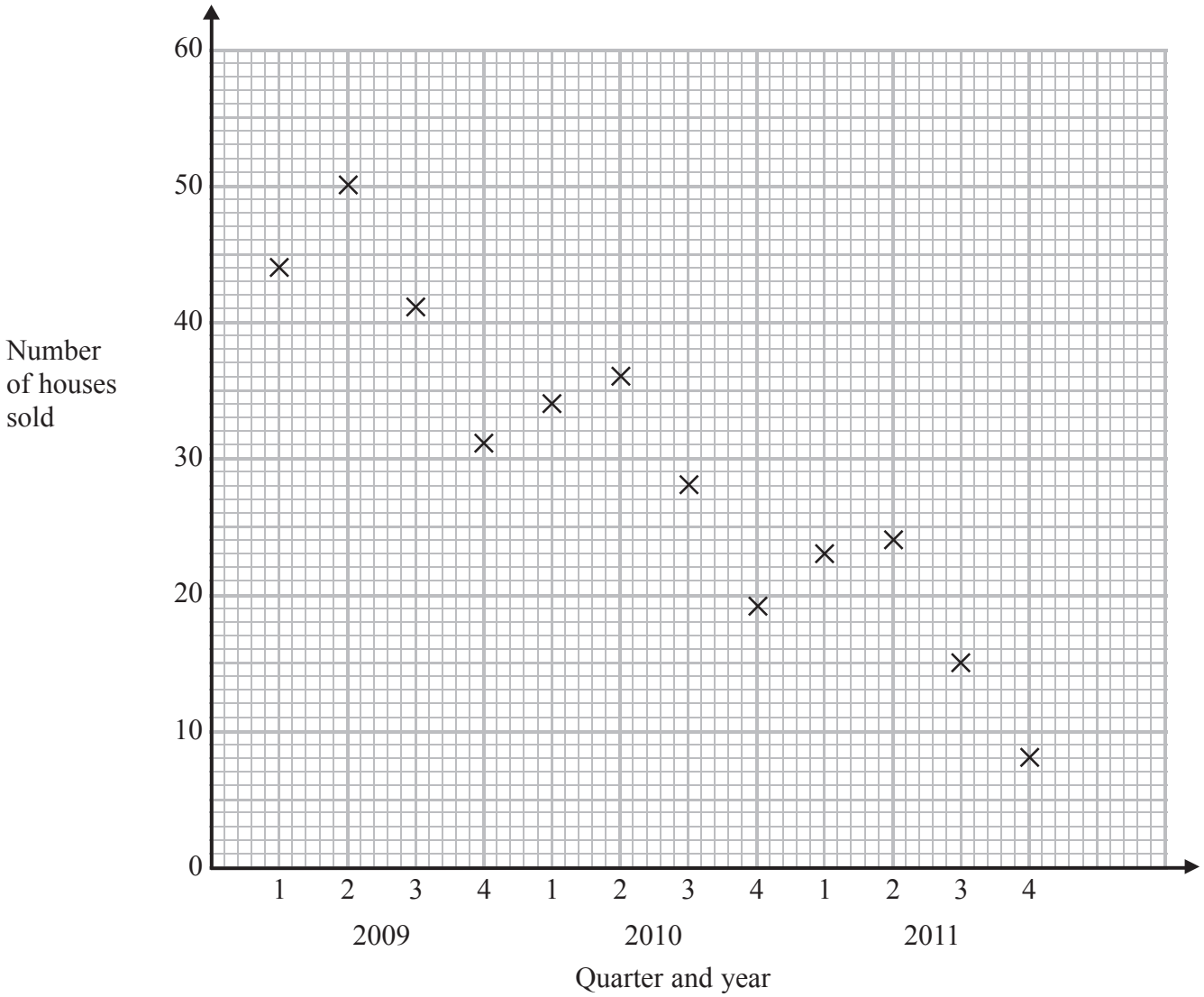
.....

2 .....

.....

(Total for Question 16 is 2 marks)

17 The time-series graph gives information about the number of houses sold by an estate agent each quarter from 2009 to 2011.



(a) Describe the trend in the number of houses sold during this period.

.....

(1)

(b) Work out the total number of houses sold in 2011.

.....

(2)

(c) Find an estimate for the number of houses sold in quarter 1 of 2012.

.....

(1)

(Total for Question 17 is 4 marks)

18 Ruth asked some people to find a word in a dictionary.

The stem and leaf diagram gives information about the time taken, in seconds, for each person to find this word.

1	8	9					
2	0	3	6	6	6	6	7
3	1	3	3	5	8		
4	2	7	9				
5	0	2					

Key:
1 | 8 represents 18 seconds

Some of these people took more than 40 seconds to find this word.

(a) How many people?

.....

(1)

(b) Write down the modal time.

..... seconds

(1)

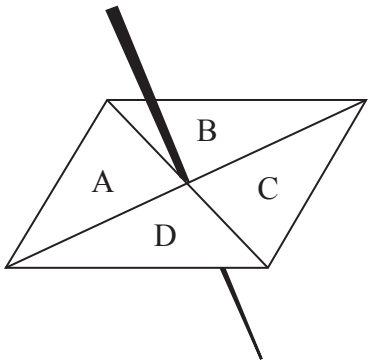
(c) Work out the range.

..... seconds

(2)

(Total for Question 18 is 4 marks)

19 The diagram shows a spinner.



The table shows the probabilities that the spinner will land on A or on B or on D.

	A	**B**	**C**	**D**
Probability	0.25	0.35		0.10

Charles spins the spinner.

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

.....

(2)

(b) Work out the probability that the spinner will **not** land on A.

.....

(2)

(c) Work out the probability that the spinner will land on C.

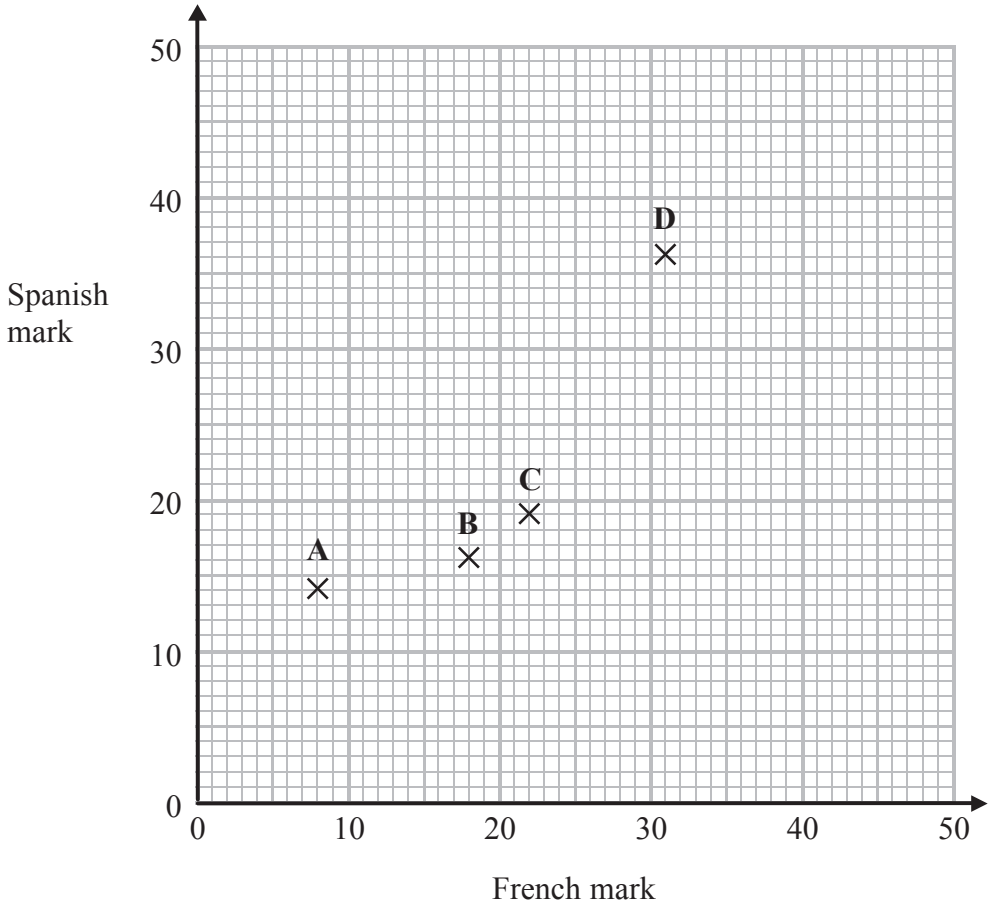
.....

(2)

(Total for Question 19 is 6 marks)

20 The marks scored by 8 students in a French test and a Spanish test were recorded.

The incomplete scatter graph and table give some information about these results.



	Student							
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
French mark				31	42	29	17	36
Spanish mark				36	42	25	20	33

(a) Use the information in the scatter graph to complete the table.

(2)

(b) Use the information in the table to complete the scatter graph.

(2)

(c) Describe the correlation between the French marks and the Spanish marks of these students.

.....

(1)

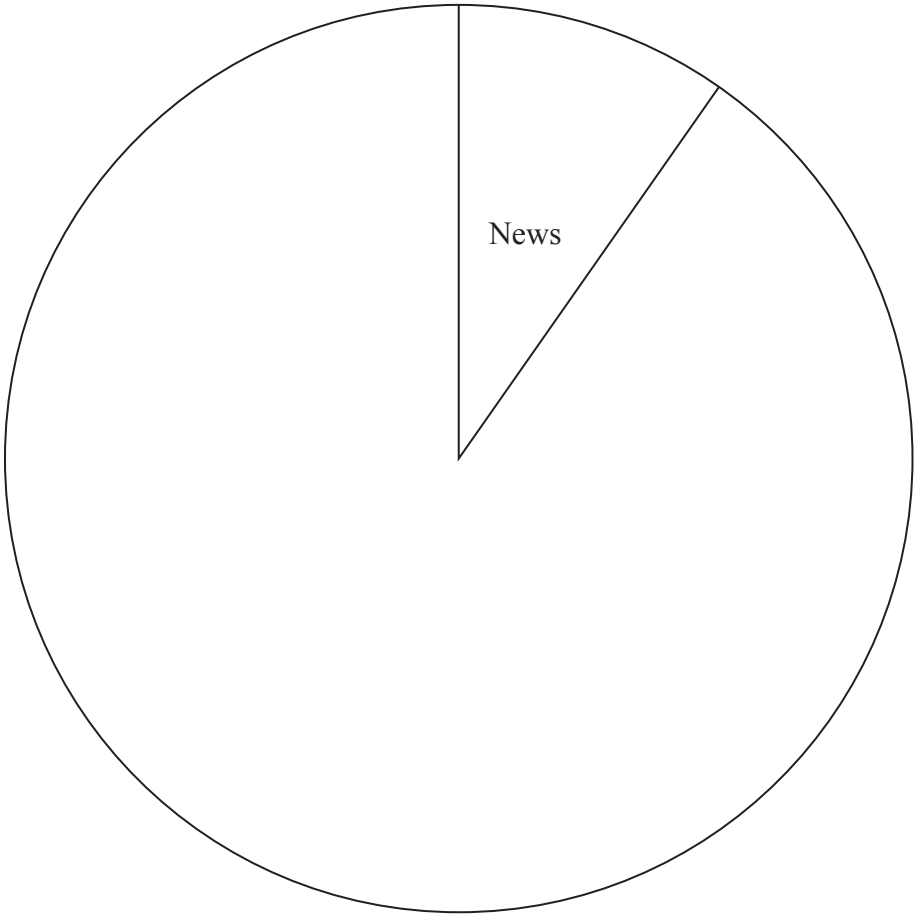
(Total for Question 20 is 5 marks)

21 Jim carried out a survey to find out the type of TV programme people like the best.
He is going to show his results in a pie chart.

The table gives information about his results.

TV programme	Number of people	Angle in pie chart
News	14	35°
Sports	34	
Drama	20	
Soaps	48	
Comedy	28	

Complete the pie chart for this information.



(Total for Question 21 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS