Section A	**Pictograms**	**Grade G → E**

1. Jackie counted the number of cars passing different places in 30 minutes.
The pictogram shows her results.

Key
= 10 cars
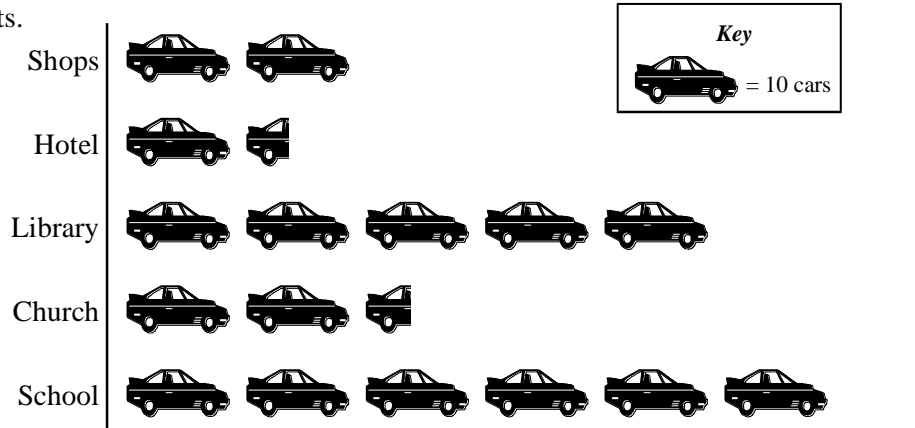
(a) How many cars passed the school?

....

Answer .... cars

(1)

(b) How many cars passed the church?

....

Answer .... cars

(1)
(Total 2 marks)

2. The pictogram shows the number of DVDs owned by each of four friends.
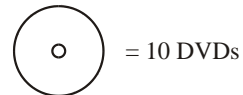
= 10 DVDs

(a) Who owns the most DVDs?
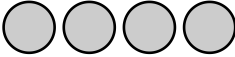
Answer ....

(1)
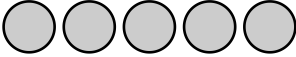
(b) How many more DVDs does Gerry own than Harry?

....

Answer ....

(1)(Total 2 marks)

3.   The pictogram shows the average number of hours of sunshine per day in Tenerife for five months.

Month		Average hours per day
May	◯◯◯◯	8
June	◯◯◯◯◯	10
July	◯◯◯◯◯◖	
August	◯◯◯◯◯◯	12
September		9

(a)   How many hours of sunshine does the symbol ◯ represent?

Answer …………………………………………..… hours

(1)

(b)   Fill in the average number of hours of sunshine per day for July.

(1)

(c)   Which month has the greatest average number of hours of sunshine?

Answer …………………………………………………

(1)

(d)   Complete the pictogram for September.

(1)
(Total 4 marks)

4. Danny records the number of hours of sunshine each day.
Some of his results are shown below.

 = 2 hours of sunshine

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

(a) How many more hours of sunshine were there on Monday than on Tuesday?

....

Answer ……………………………………… hours

(1)

(b) On Saturday Danny recorded 5 hours of sunshine.

Complete the pictogram above.

(2)
(Total 3 marks)

5. Philip asks his friends what their favourite sport is.
The results are shown in the tally chart.

Sport	Tally	
Football	卌 卌 ‖	
Rugby	‖‖	
Racing	卌 ‖‖	
Other	卌 卌	

(a) How many friends chose football?

Answer ....

(1)

(b) How many friends did Philip ask?

.....................……………………………………………………………………………

Answer ....

(2)

(c) Draw a pictogram to show Philip's results.

Use the symbol 🧍 to represent 4 friends.

Football	
Rugby	
Racing	
Other	

(2)
(Total 5 marks)

6. Balbir asked his friends to choose, from a list, which type of firework they like best.

Their replies were

Rocket	Sparkler	Rocket
Catherine Wheel	Rocket	Catherine Wheel
Rocket	Roman Candle	Rocket
Roman Candle	Sparkler	Roman Candle
Sparkler	Roman Candle	Rocket

(a) Complete the tally and the frequency columns in the table below.

Firework	Tally	Frequency
Rocket		
Catherine Wheel		
Sparkler		
Roman Candle		

(2)

(b) Draw a pictogram to show these results.

Use the symbol ◻ to represent 2 replies.

Rocket	
Catherine Wheel	
Sparkler	
Roman Candle	

(2)

(c) What is the probability that one of his friends chosen at random replied 'Rocket'?
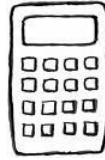
Answer ....

(1)
(Total 5 marks)

Success:

Target:

Teacher
Assessment

Section B   Bar Charts   Grade G → D

1. Emma asks her friends what type of TV programme they like best.

Type of TV programme	Frequency
Cartoons	4
Drama	2
Quizzes	1
Soaps	6

(a) Draw a bar chart to show Emma's results.
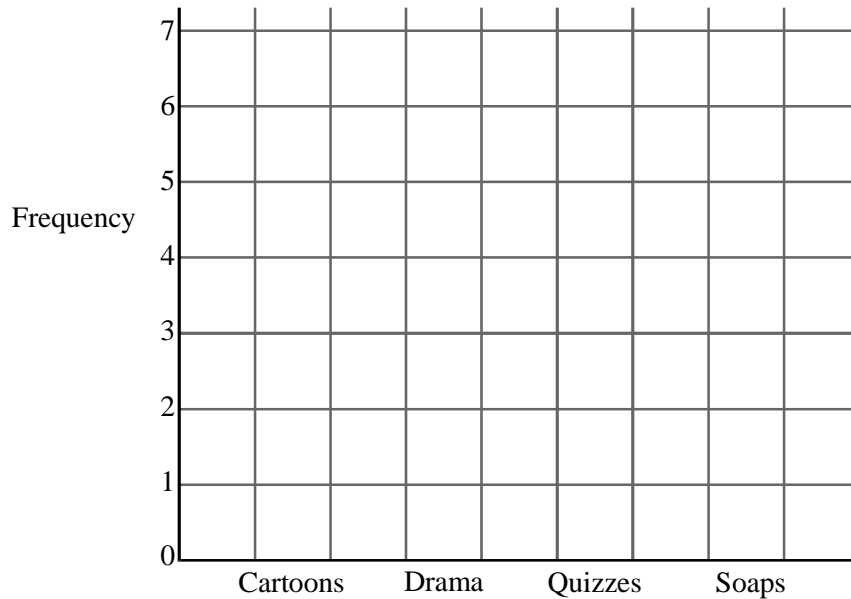
(2)

(b) Emma chooses one of her friends at random. What is the probability that this friend chose cartoons?

.........................……………………………………………………………………………

Answer ....

(3)
(Total 5 marks)

2.   The data shows the shoe sizes of 20 students.

~~5~~	7	6	7	10	8	6	7	9	10
10	8	6	6	7	8	7	9	7	6

(a) Complete the frequency table below.

Shoe size	Tally	Frequency
5			1
6		
7		
8		
9		
10		

(2)

(b) Complete the bar chart to show this information.
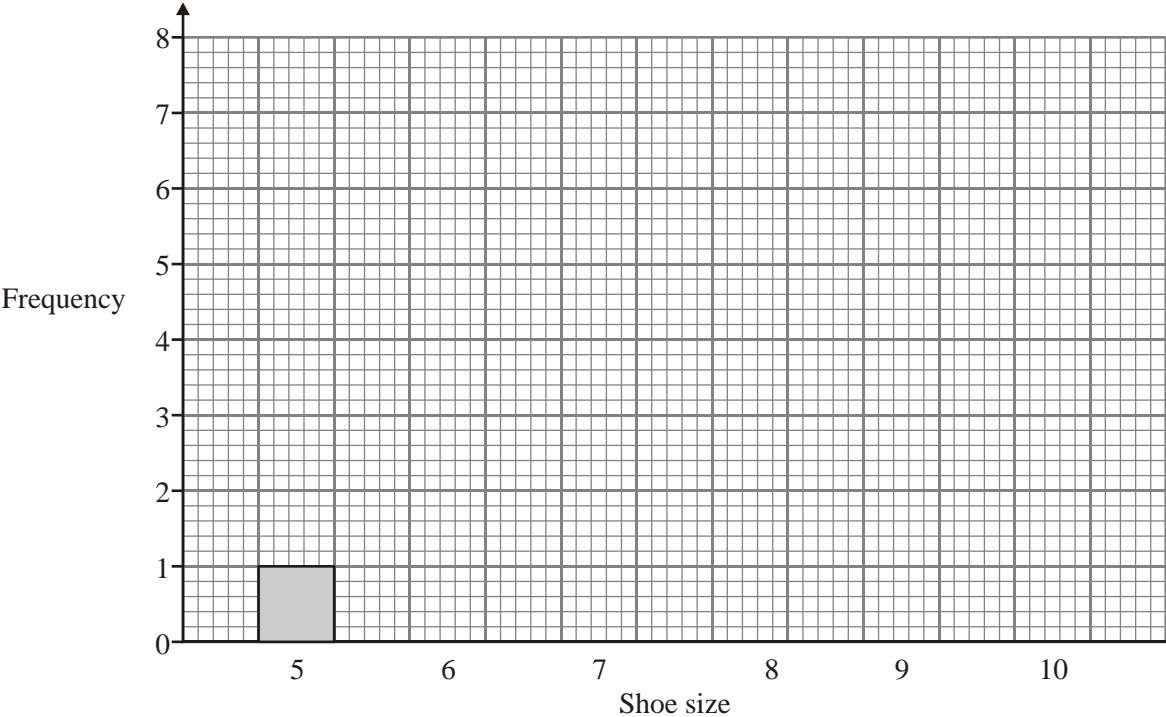
(2)

(c) Write down the mode of the shoe sizes.

Answer ....

(1)
(Total 5 marks)

3. The table shows the number of cars parked in three hospital car parks at 2 pm on one afternoon.

Car park	Number of cars
Staff (S)	40
Visitors (V)	70
Casualty (C)	65

(a) Draw a bar chart to show this information.
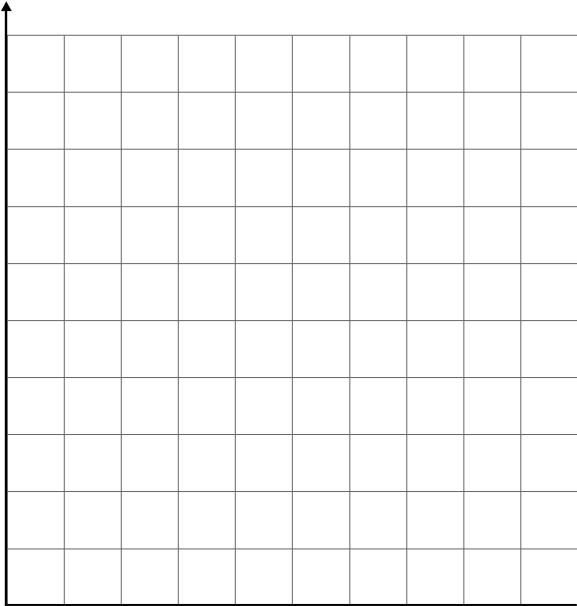
(3)

(b) Work out how many more cars were parked in the Visitors car park than in the Staff car park.

....

Answer .... cars

(1)

(c) The table below shows the number of empty car parking spaces in the three hospital car parks at 2 pm on that afternoon.

Car park	Number of empty car parking spaces
Staff (S)	5
Visitors (V)	3
Casualty (C)	2

Calculate the **total** number of cars that can be parked in the three car parks.

....

....

Answer .... cars

(2)(Total 5 marks)

4. Dave and Todd go fishing one day.
The table shows the total number of each type of fish they caught.

Type of fish	Total number caught
Perch	6
Roach	8
Eels	5

(a) Draw and label a bar chart to show this information.
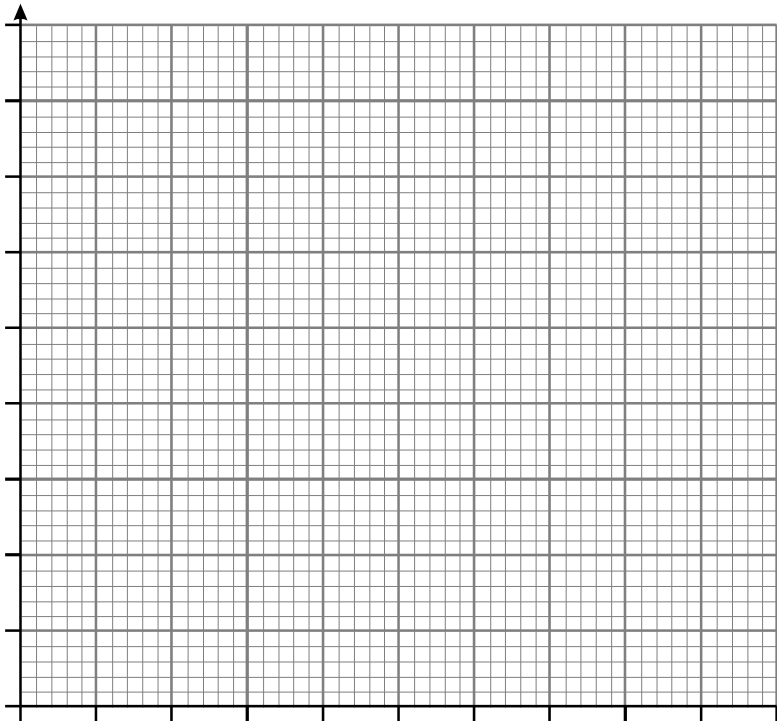
(3)

(b) Which type of fish is the mode?

Answer ....

(1)

(c) Dave caught 4 perch, 5 roach and no eels.
Work out the number of each type of fish that Todd caught.

....

....

Perch ....

Roach ....

Eels ....

(2)
(Total 6 marks)

5. The bar chart shows the number of tickets sold for each night of a school play.
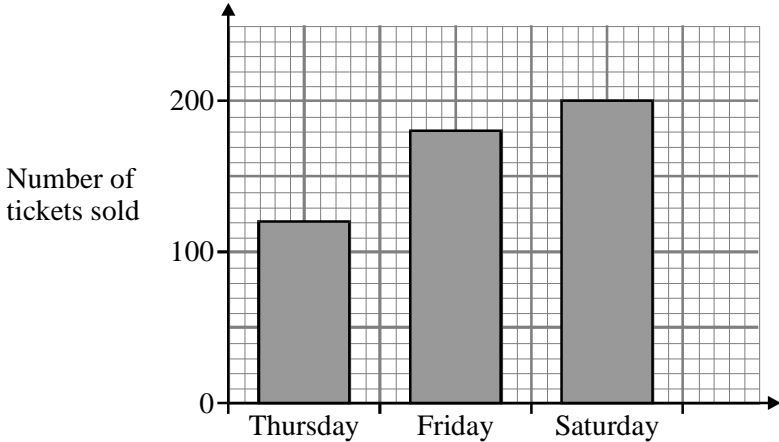
(a) How many tickets were sold for Thursday?

Answer ....

(1)

(b) How many tickets were sold altogether?

......................……………………………………………………………………………………

Answer ....

(2)

(c) How many more tickets were sold for Saturday than for Thursday?

......................……………………………………………………………………………………

Answer ....

(2)
(Total 5 marks)

6. The bar chart shows the percentages spent by a council on local services.

Local Services
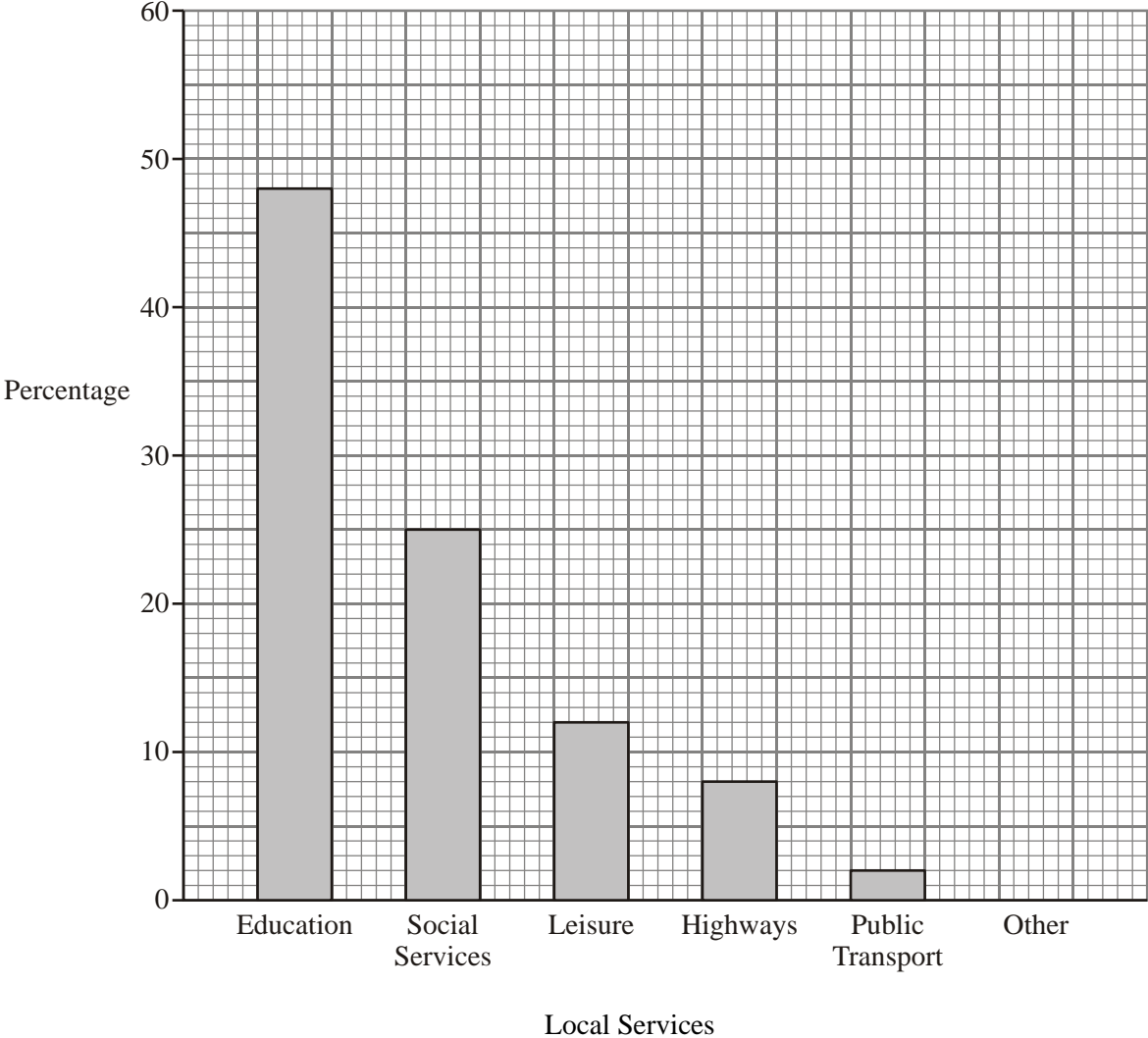
(a) What percentage is spent on Leisure?

Answer .... %

(1)

(b) Which service has most spent on it?

Answer ....

(1)

(c) Complete the bar chart for Other.

....

....

(2)
(Total 4 marks)

7. The frequency diagram shows the distribution of shoe sizes for a class of year 8 pupils.
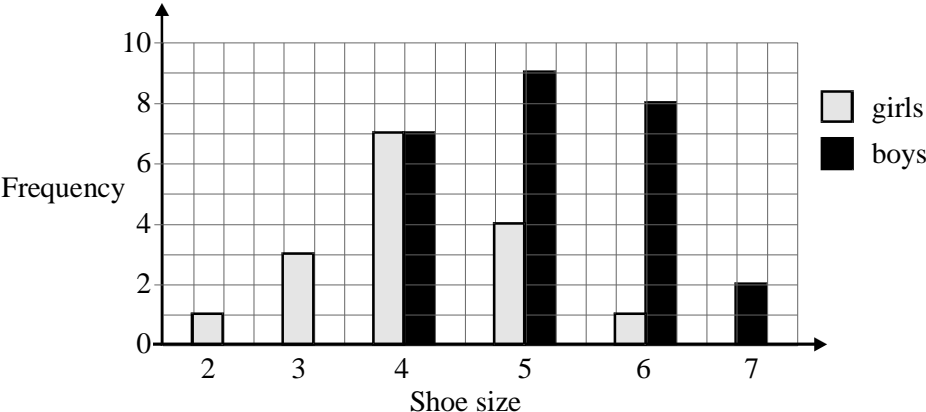
(a) How many pupils are in the class?

....

Answer ....

(1)

(b) Which shoe size is the mode for boys?

....

Answer ....

(1)

(c) Which shoe size is the mode for all the pupils in the class?

....

Answer ....

(2)
(Total 4 marks)

8. The diagram shows the minimum and maximum temperature, in °C, for one day in June in five cities.
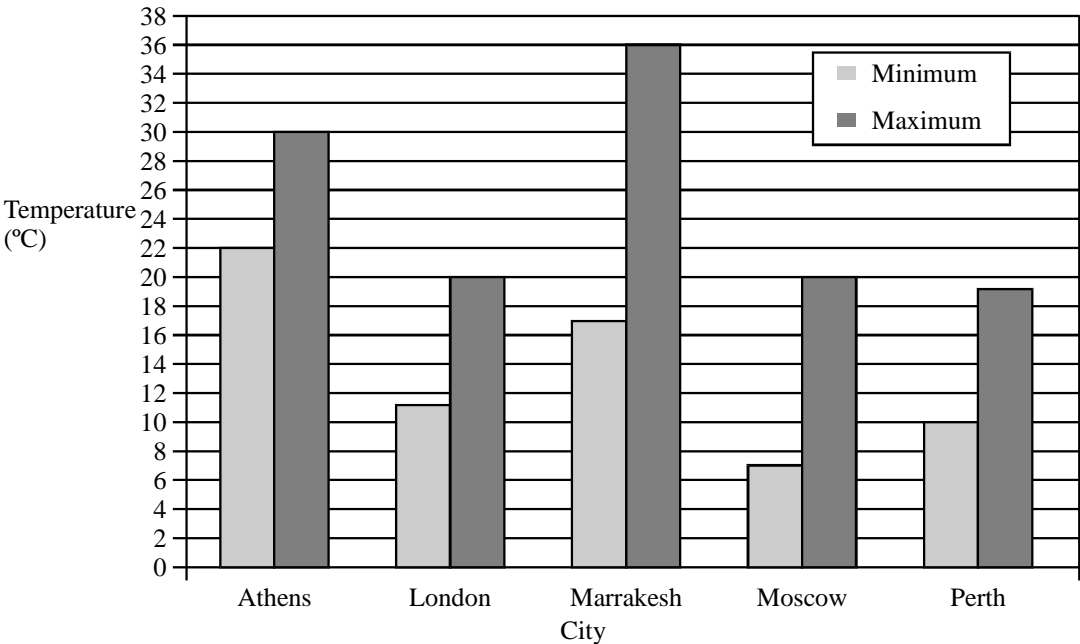
(a) Which two cities have the same **maximum** temperature?

Answer ....

(1)

(b) Work out the difference between the minimum and maximum temperature in

(i) Athens,

Answer .... °C

(ii) Perth.

Answer .... °C

(2)

(c) Mike says the minimum temperature is always about half the maximum temperature for each city.
Give an example to show that Mike is wrong. Give a reason for your choice.

....

....

....

....

(2)(Total 5 marks)

Success:	Target:

Section C   Frequency Diagrams   Grade D / C

1. The table shows the heights of some children.

Height, h(cm)	Frequency
$60 < h \leq 80$	6
$80 < h \leq 100$	8
$100 < h \leq 120$	10
$120 < h \leq 140$	3

(a) Use this information to draw a frequency diagram.
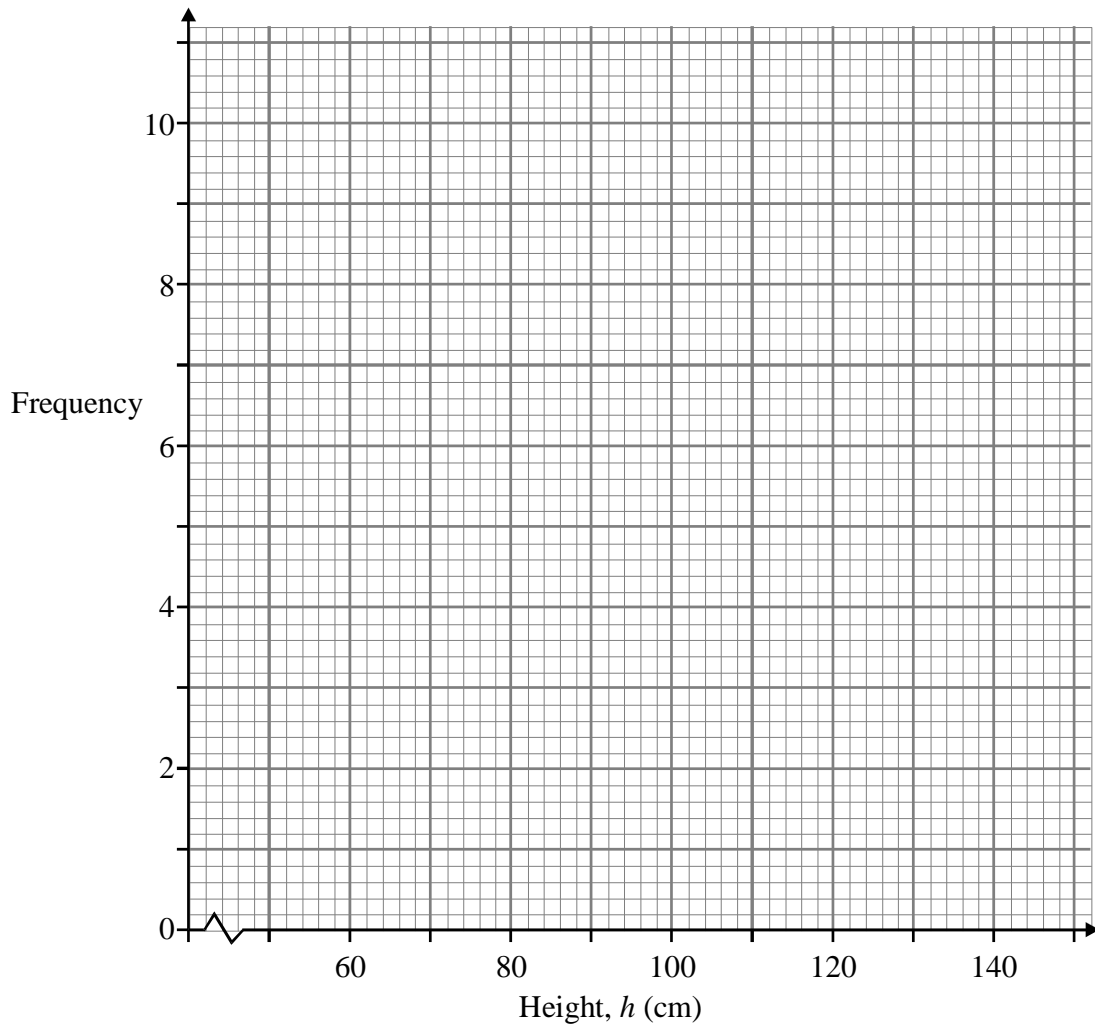
(Total 2 marks)

2. Carla and Debbie are telephone sales assistants. The length and frequency of telephone calls made by Carla during one day are shown in the table.

Length, t (minutes)	Frequency
$0 < t \leq 2$	25
$2 < t \leq 4$	40
$4 < t \leq 6$	18
$6 < t \leq 8$	10
$8 < t \leq 10$	4

(a) Draw a frequency polygon for this data.
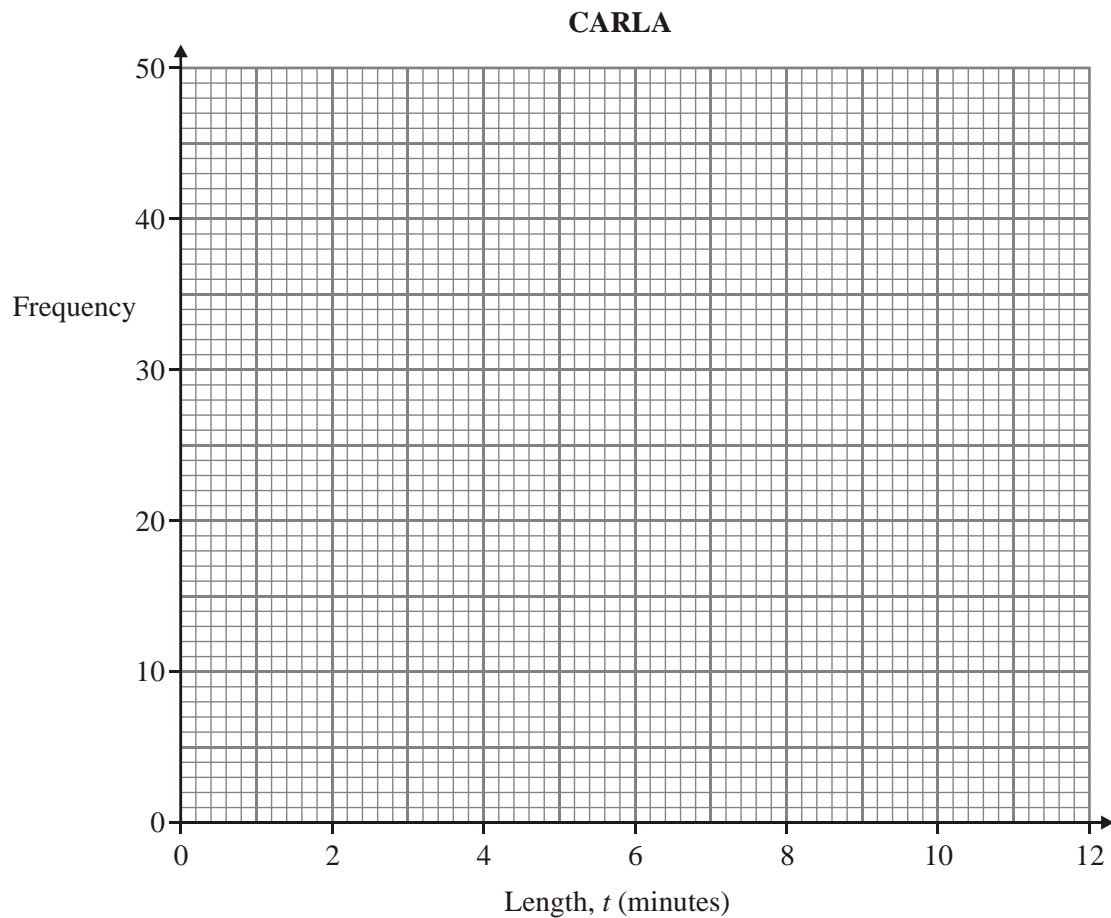
CARLA

(2)

(b)   The frequency polygon below shows the length and frequency of telephone calls made by Debbie during the same day.
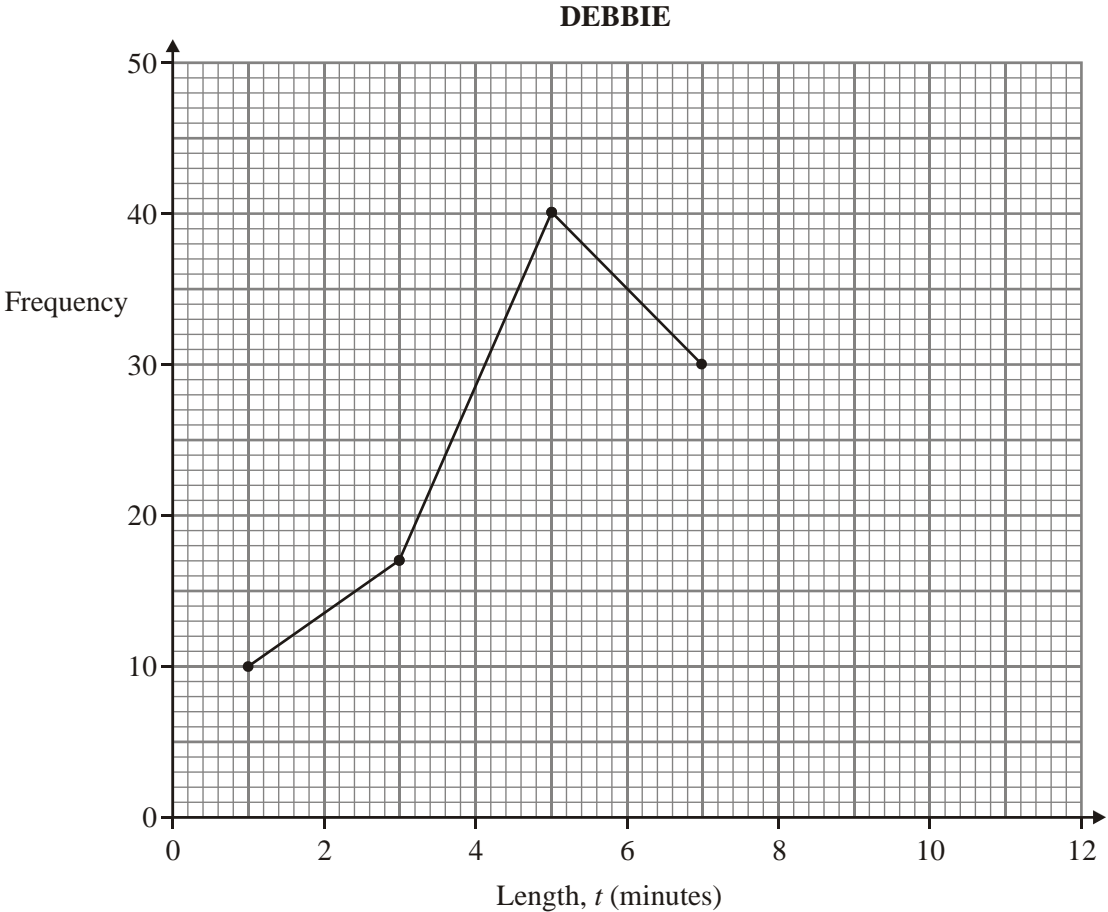
DEBBIE

Write down **two** comparisons between the lengths of telephone calls made by Carla and Debbie that day.

Comparison 1 ....

....

....

Comparison ....

....

....

(2)
(Total 4 marks)

3. The frequency polygon shows the number of hours of television watched each week by 30 teachers.
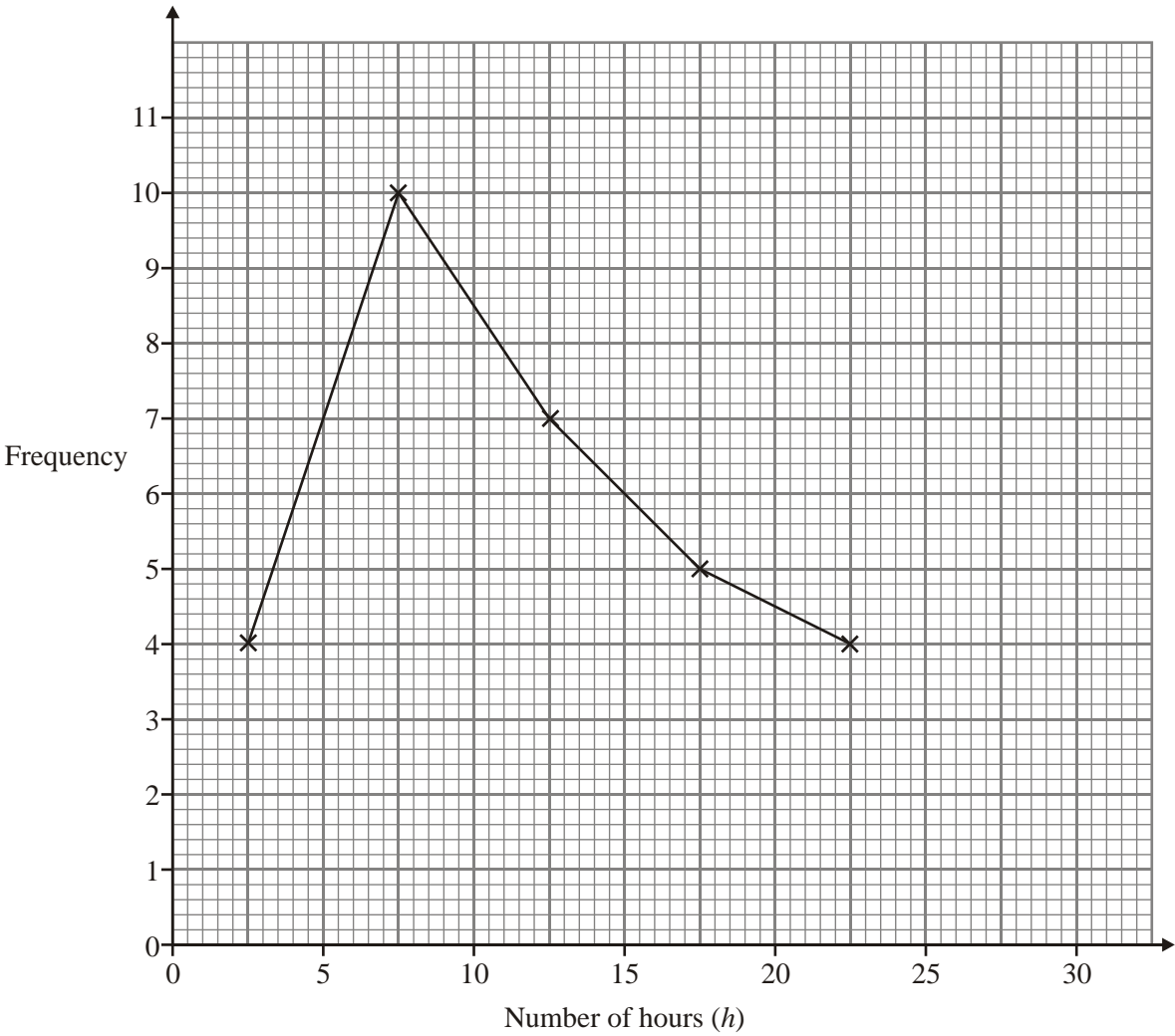
Number of hours (h)

(a) One of the teachers is picked at random.
What is the probability that this teacher watches more than 15 hours of television each week?

....

....

....

Answer ....

(2)

(b)   The number of hours of television watched each week by 30 students is shown below.

Number of hours (h)	Frequency
$0 < h \le 5$	1
$5 < h \le 10$	2
$10 < h \le 15$	7
$15 < h \le 20$	9
$20 < h \le 25$	7
$25 < h \le 30$	4

On the same grid (on page 17) draw a frequency polygon to show this information.

(2)

(c)   Give **two** comparisons between the number of hours of television watched by these teachers and students.

Comparison 1

....

....

Comparison 2

....

....

(2)
(Total 6 marks)

4. The journey time to school of a sample of 100 pupils is shown in the table.

Journey time, t (minutes)	Frequency
$0 < t \le 10$	35
$10 < t \le 20$	40
$20 < t \le 30$	22
$30 < t \le 40$	3

(a)   Draw a frequency diagram for this data.

Frequency

Journey time, t (minutes)
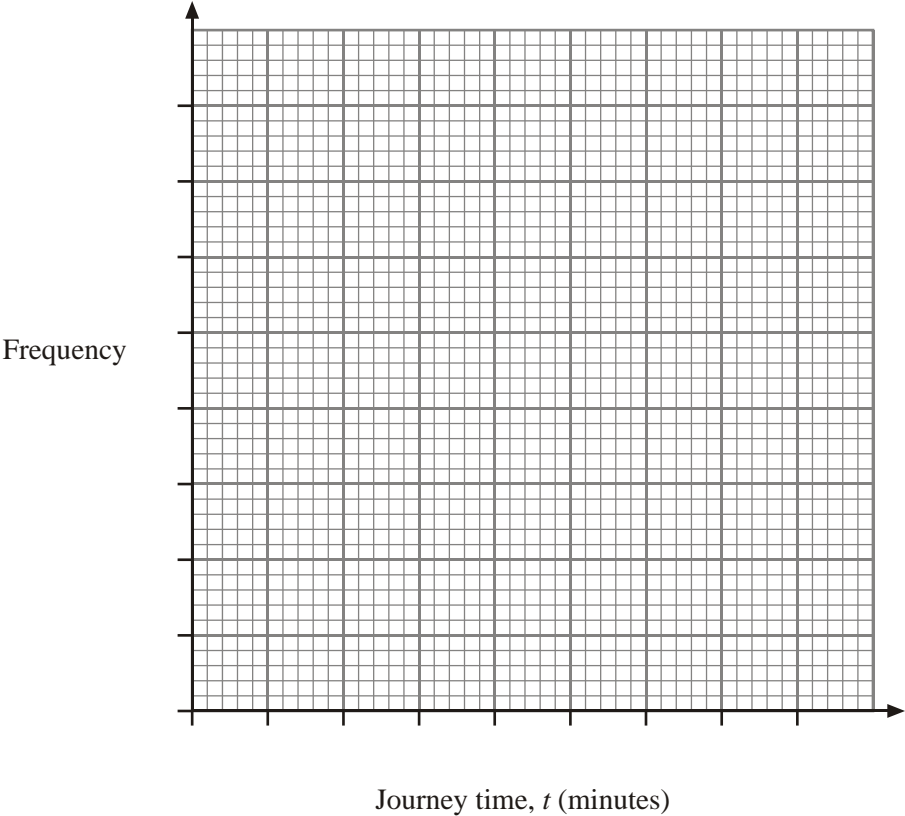
(3)

(b)   The school has 800 pupils.

Use the given data to estimate how many pupils take more than 20 minutes to travel to school.

....

....

....

Answer ....

(3)
(Total 6 marks)

5. The frequency table shows the costs of car insurance premiums paid by 200 people.

Insurance premium, £x	Frequency
$200 < x \le 400$	34
$400 < x \le 600$	52
$600 < x \le 800$	76
$800 < x \le 1000$	26
$1000 < x \le 1200$	12

Draw a frequency diagram to represent this data.
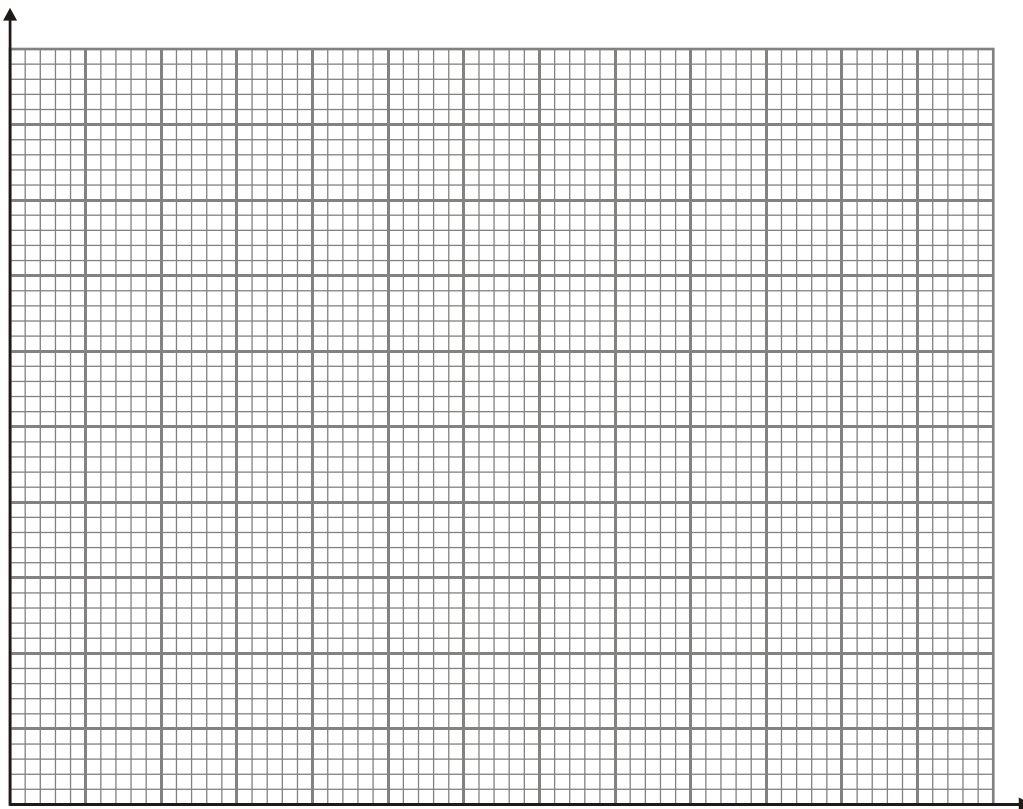
(Total 3 marks)

Success:	Target:
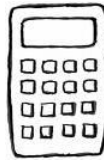
| **Section D** | **Pie Charts** | **Grade D / C** |

1. The table shows the races that 60 primary school pupils entered on their Sports Day.
   They each entered one race.

Race entered	Number of pupils
Egg and spoon	18
3-legged	20
Sack	12
Obstacle	10

(a) Draw and label a pie chart to represent the information in the table.

…………………………………………………...……………………………………………….

…………………………………………………...……………………………………………….
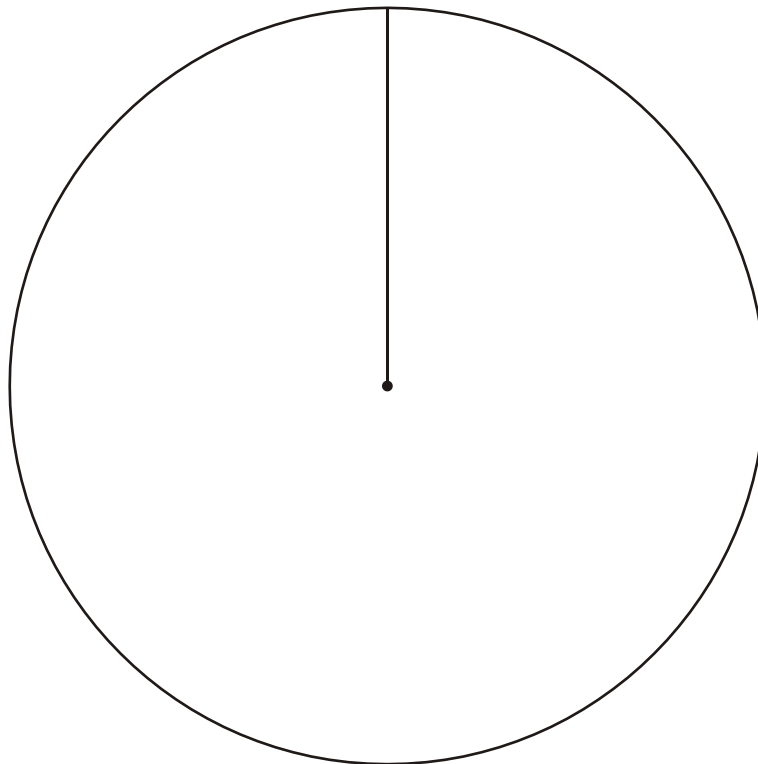
(4)

(b) Work out the percentage of pupils who entered the egg and spoon race.

…………………………………………………...……………………………………………….

…………………………………………………...……………………………………………….

Answer ....%

(2)(Total 9 marks)

2.   Billy asks 40 students how they travel to college. The table shows the results.

Method of travel	Frequency
Car	20
Bus	10
Walk	6
Other	4

(a)   Draw and label a pie chart to represent the information in the table.

......................……………………………………………………………………………

......................……………………………………………………………………………
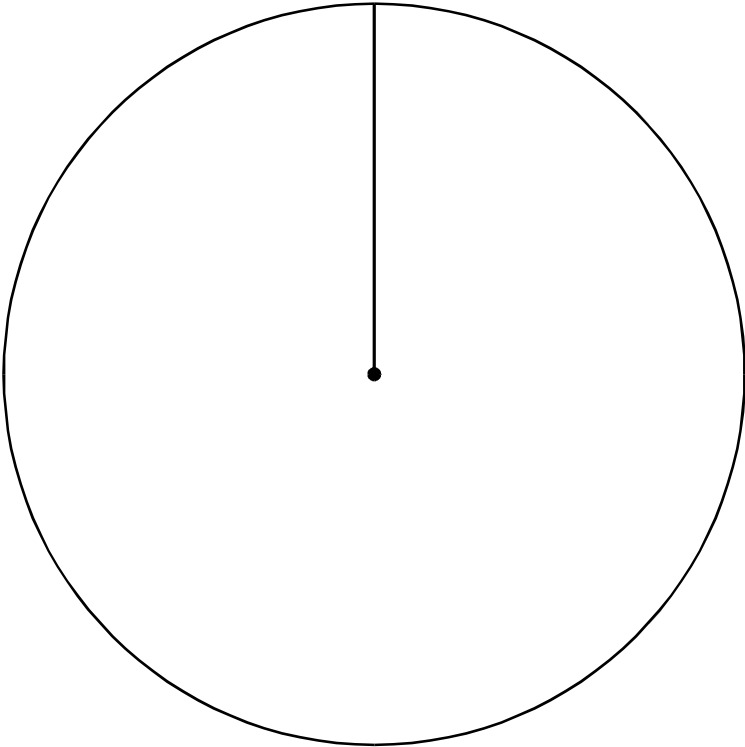
(4)

(b)   Explain why Billy's results may not show the correct proportions for the whole college.

......................………………………………………………………………………………

......................………………………………………………………………………………

(1)
(Total 5 marks)

3. A school entered 144 pupils for GCSE Mathematics as shown in the table.

Tier	Number of pupils
Foundation	46
Intermediate	70
Higher	28

Complete the pie chart for the school GCSE Mathematics entry.
Label each sector clearly.
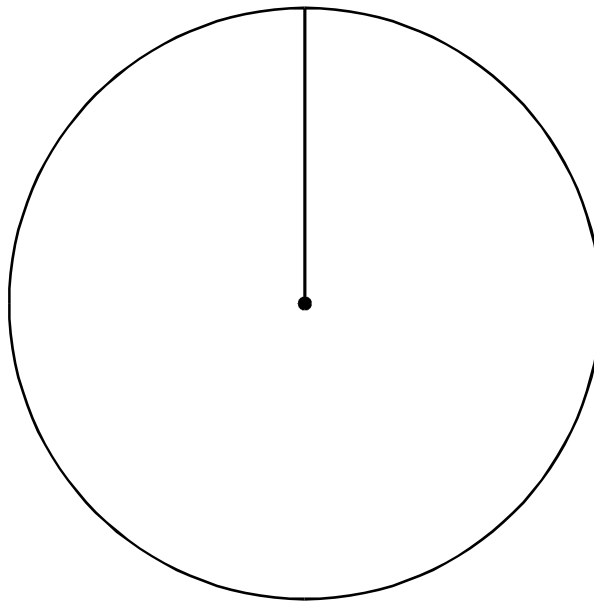
(Total 3 marks)

4. The number of complaints made about different parts of the Health Service last year is shown in the table.

Type	Number of complaints
Hospitals	400
Doctors	200
Dentists	80
Other	120

Draw and label a pie chart to represent these data.

....

....

....

....
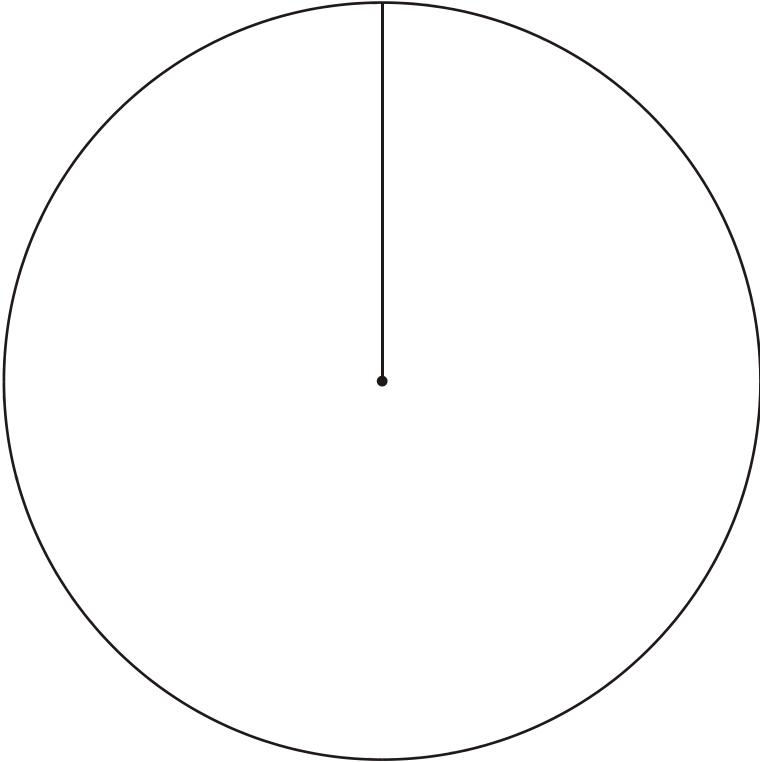
(Total 4 marks)

5. The pie charts show the results of a cycling test.
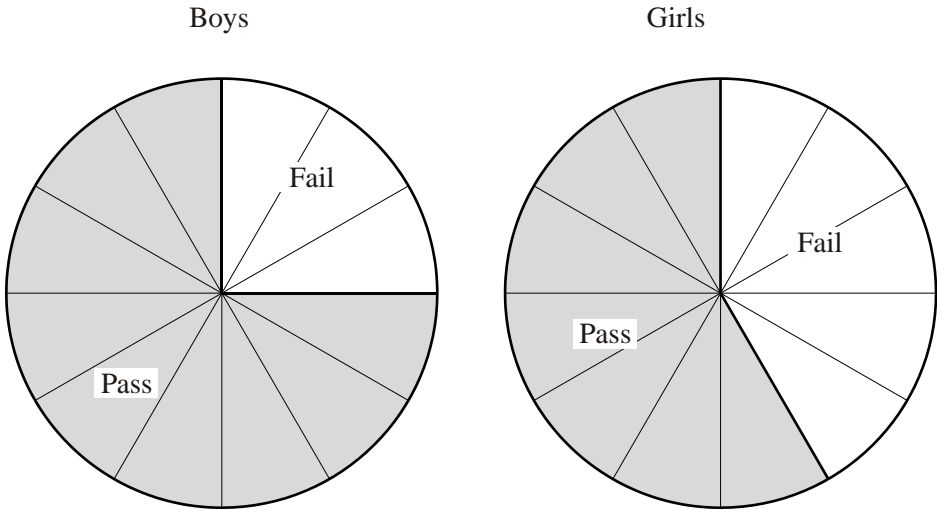
Boys   Girls

(a) The number of boys who fail the test is 15.

How many boys pass the test?

....

....

Answer ……………………………………………………………

(2)

(b) The number of girls who take the test is the same as the number of boys who take the test.
This two-way table shows that 15 boys fail the test.

	Boys	**Girls**
Pass		
Fail	15	

Complete the two-way table.

....

....

....

....

(2)
(Total 4 marks)

6. The pie chart shows the proportions of complaints made about different parts of the Health Service last year.
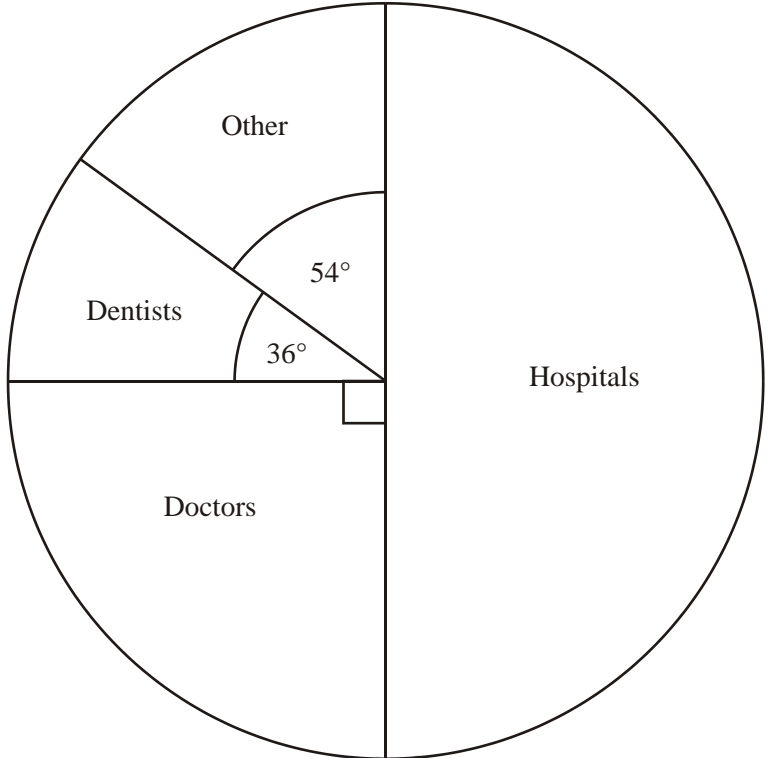
(a) What fraction of complaints were made about doctors?

....

Answer ....

(2)

(b) There were 400 complaints made about hospitals.

How many complaints were made altogether?

....

....

Answer ....

(2)

(c) Work out the number of complaints made about dentists.

....

....

Answer ....

(3)
(Total 7 marks)

7. A football club is choosing a new mascot. The club asks 400 supporters to help choose the mascot. The pie chart shows their choices.
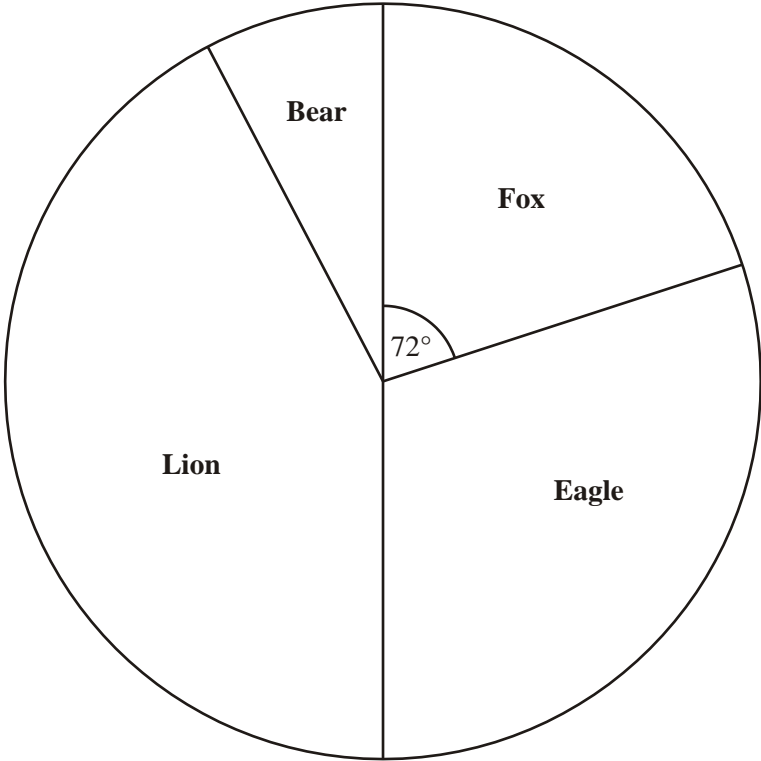
(a) How many of the 400 supporters choose the fox?

....

....

....

Answer ....

(3)

(b) The number of supporters who choose the lion is 168.
What percentage of the 400 supporters is this?

....

....

....

Answer .... %

(2)(Total 5 marks)

Success:

Target:
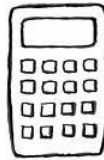
Section E   Stem and Leaf Diagrams   Grade D / C

1.   A taxi-driver keeps a record of how much he spends on petrol each week.
     The amounts, in pounds, are

30	24	32	15	28	9	18
24	23	36	22	14	19	41

(a)   Draw an ordered stem-and-leaf diagram to show these amounts.
      Remember to complete the key.

....

....

....

....

....

Key ...... | ...... represents £ ....

```
0 | ................................................
1 | ................................................
2 | ................................................
3 | ................................................
4 | ................................................
```

(3)

(b)   Work out the range of these amounts.

....

Answer £ ....

(1)
(Total 4 marks)

2. The number of pupils absent from a school each week is listed below.

125　134　121　111　105　109　118　122　119　126　133

(a)　Show the data in an ordered stem-and-leaf diagram.

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………

Key　　12 | 5　　represents 125 pupils

……… | …………………………………………………………

……… | …………………………………………………………

……… | …………………………………………………………

……… | …………………………………………………………

(3)

(b)　Write down the median number of pupils absent.

……………………………………………………………………………………….

Answer …………………………………………………………

(1)
(Total 4 marks)

3. The temperature is recorded in 19 towns on one day.

9	14	21	15	2	10	11	17	7	24
23	18	5	11	4	20	18	23	4	

(a) Draw a stem and leaf diagram to represent these data and complete the key.

.............................…………………………………………………………………

.............................…………………………………………………………………

.............................…………………………………………………………………

Key | | represents ....……………

0	
1	
2	
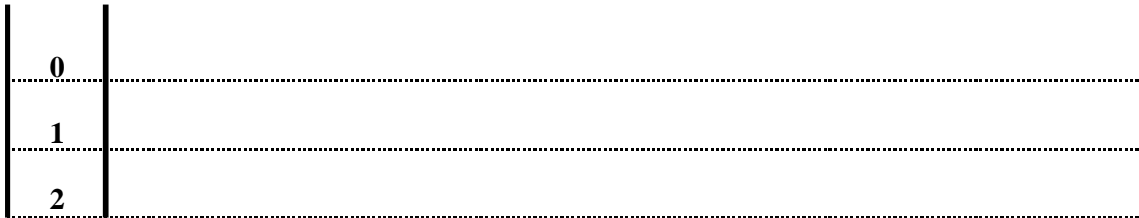
(3)

(b) The median of these temperatures is 14.

The temperature of another town is then included.

(i) Write down a temperature which would reduce the median.

Answer ....

(1)

(ii) What temperature would reduce the median to 13?

…………………………………………………………………………………..

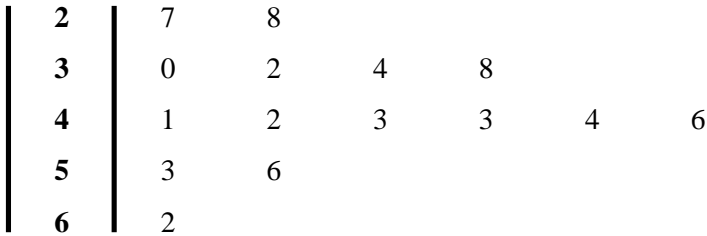Answer ....

(1)
(Total 5 marks)

4. The stem and leaf diagram shows the ages, in years, of 15 members of a badminton club.

Key:	**2**		7	means an age of 27 years

```
2 | 7   8
3 | 0   2   4   8
4 | 1   2   3   3   4   6
5 | 3   6
6 | 2
```

(a)   How many members are aged over 40?

Answer ....

(1)

(b)   What is the median age of the members?

....

Answer .... years

(1)

(c)   What is the range of the ages?

....

Answer .... years

(1)
(Total 3 marks)

5. The time taken, in minutes, by each of 15 pupils to travel to school, is shown in the ordered stem-and-leaf diagram.

Key 3 | 2 represents 32 minutes

```
0 | 5   5   8
1 | 0   2   4   5   9
2 | 3   5   6   6
3 | 2   4
4 | 6
```
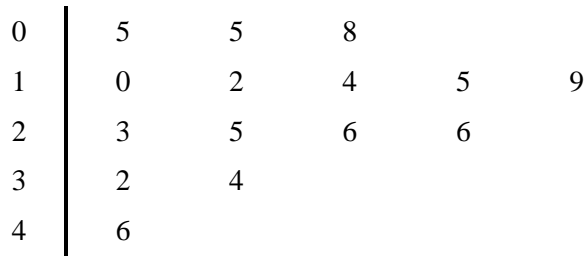
(a) How many pupils took less than 20 minutes to travel to school?

Answer ……………………........................ pupils

(1)

(b) What was the median number of minutes taken to travel to school?

Answer ……………………….................... minutes

(1)

(c) Another pupil takes 37 minutes to travel to school.

Tick the correct box to show what effect, if any, this has on

(i) the median,

☐   ☐   ☐

Decreases   Stays the same   Increases

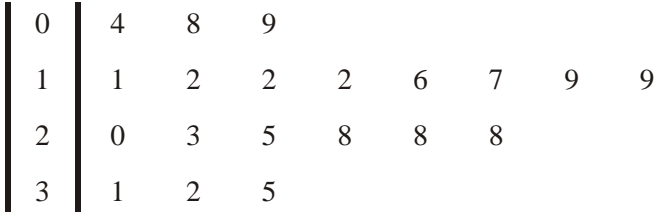(ii) the range.

☐   ☐   ☐

Decreases   Stays the same   Increases

(2)
(Total 4 marks)

6. The ordered stem and leaf diagram shows the number of cameras sold each day, over a period of 20 days.

Key | 1 | 2   represents 12 cameras

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

The next day 28 cameras are sold.
Does the median increase, decrease or stay the same?
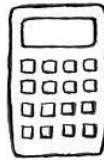You **must** show your working.

....

....

....

....

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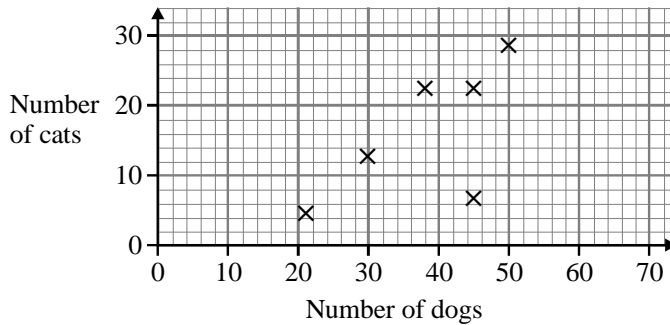
(Total 3 marks)

Success:

Target:

| Section F | Scattergraphs | Grade F → C |

1. The scatter graph shows the number of cats and the number of dogs in each of six villages.

(a) Ayville has the lowest number of cats of the six villages.
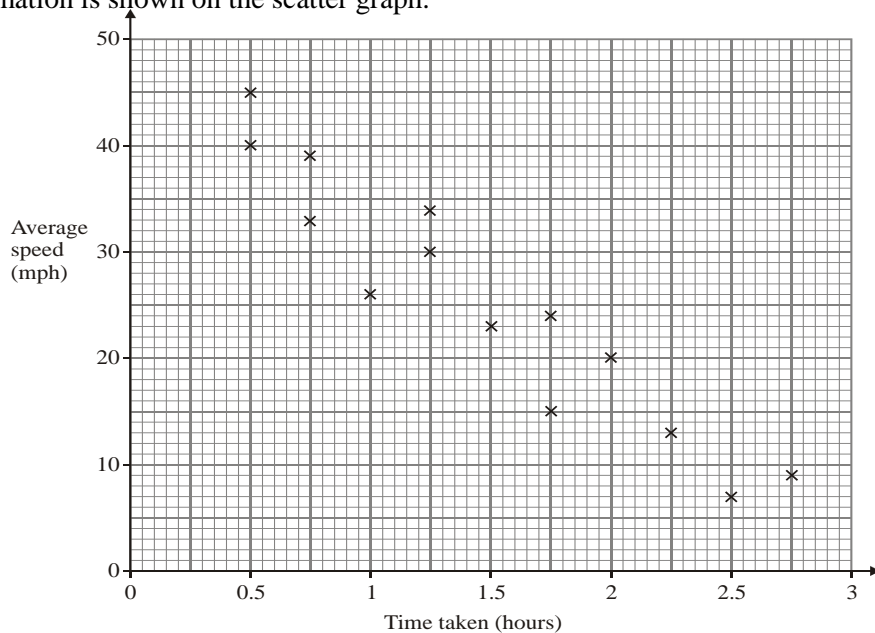Use the graph to find the number of cats in Ayville.

Answer ....……........................…..

(1)

(b) The point plotted for Beeville does not fit the general trend.
Circle the point for Beeville on the scatter graph.

(1)(Total 2 marks)

2. Steve records the time taken and the average speed for several different journeys.
This information is shown on the scatter graph.
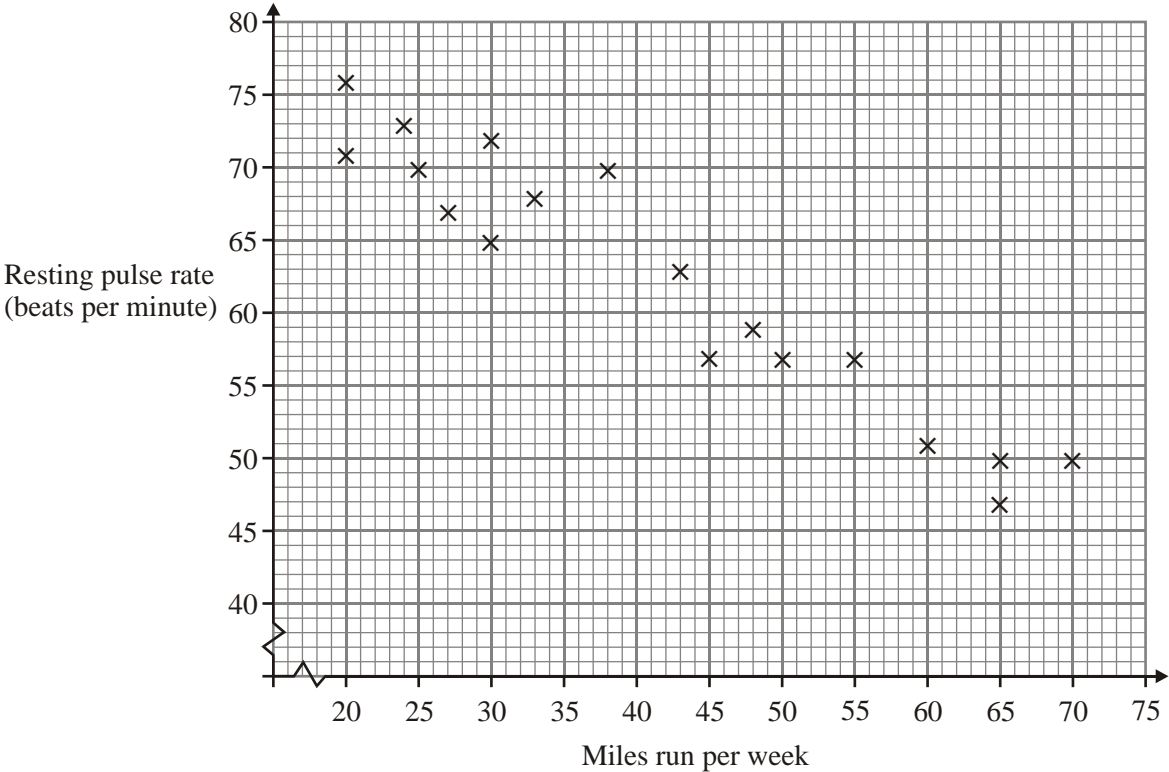

(a) Draw a line of best fit on the scatter graph.

(1)

(b) Describe the relationship between the time taken and the average speed.

...............……………………………………………………………………………………..

(1)(Total 2 marks)

3.   Some runners recorded their resting pulse rates and miles run per week.

(a)   How many runners have a resting pulse rate of 57 beats per minute?

Answer ....

(1)

(b)   Draw a line of best fit.

(1)

(c)   Predict the resting pulse rate of a runner who runs 40 miles per week.

Answer .... beats per minute

(1)

(d)   Describe the relationship between the resting pulse rate and miles run per week.

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(1)
(Total 4 marks)

4. Mrs Millington gives her class two mock GCSE examination papers. The scatter graph shows the results.
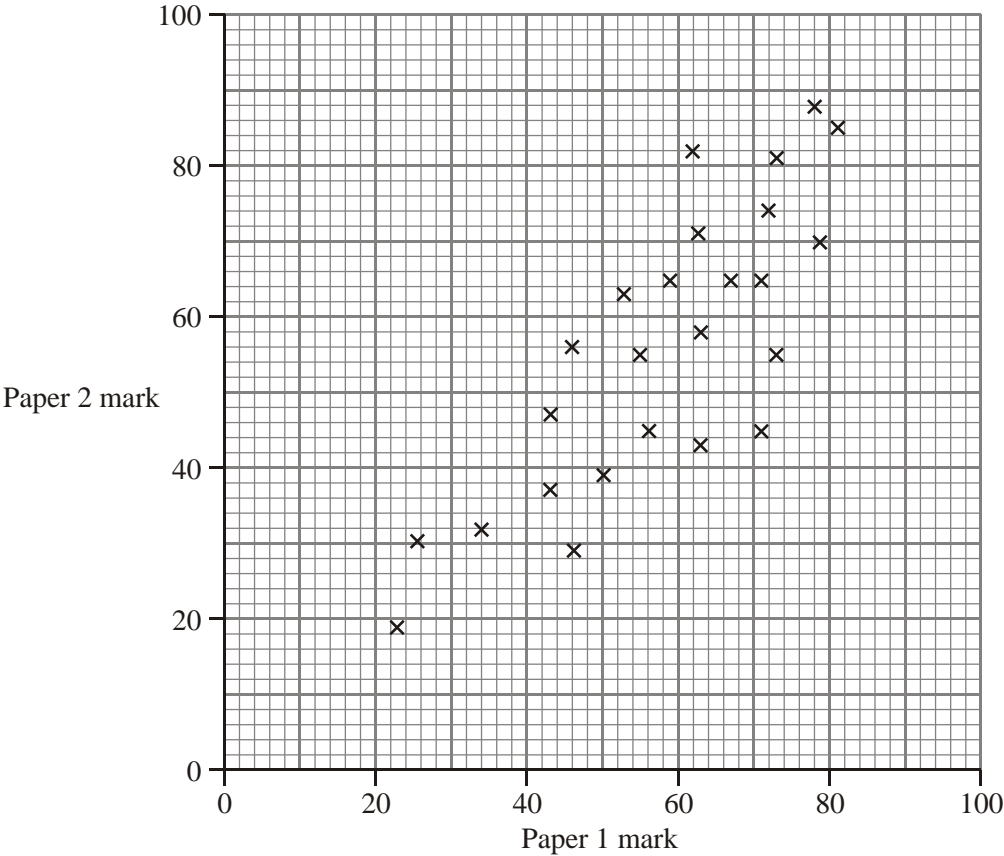
(a) Write down the highest mark scored on Paper 2.

Answer .... marks

(1)

(b) Describe the relationship shown on the scatter graph.

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....

(1)

(c) Draw a line of best fit on the scatter graph.

(1)

(d) Kay was absent for Paper 2, but scored a mark of 56 on Paper 1.
Use your line of best fit to estimate Kay's mark on Paper 2.

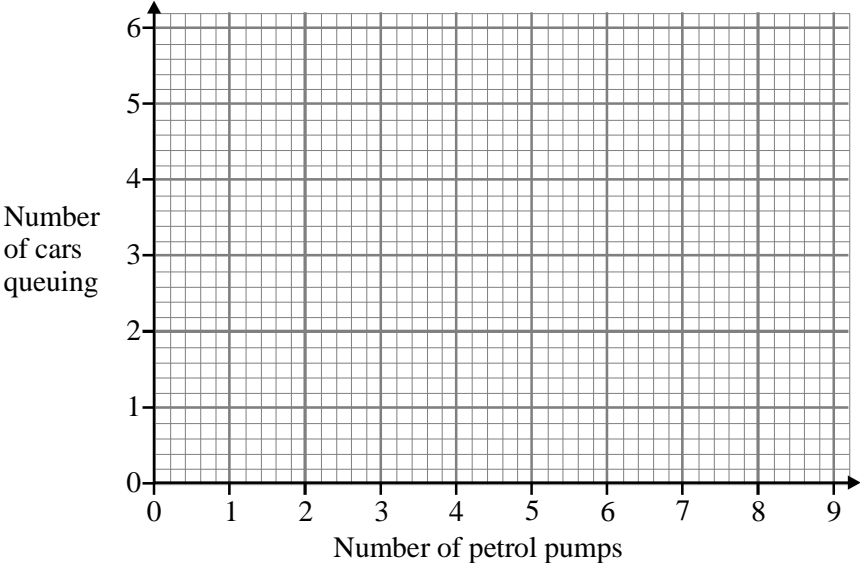...

Answer .... marks

(1)
(Total 4 marks)

5. The table shows the number of petrol pumps and the number of cars queuing at midday at six garages.

Number of petrol pumps	3	4	6	4	3	5
Number of cars queuing	6	5	3	4	5	4

(a)   Plot a scatter graph of these data on the axes below.

(2)

(b)   Draw a line of best fit on your scatter graph.

(1)

(c)   Use your line to estimate the number of cars queuing at a garage with 8 petrol pumps.

Answer ....

(1)

(d)   Explain why your answer in part (c) may be unreliable.
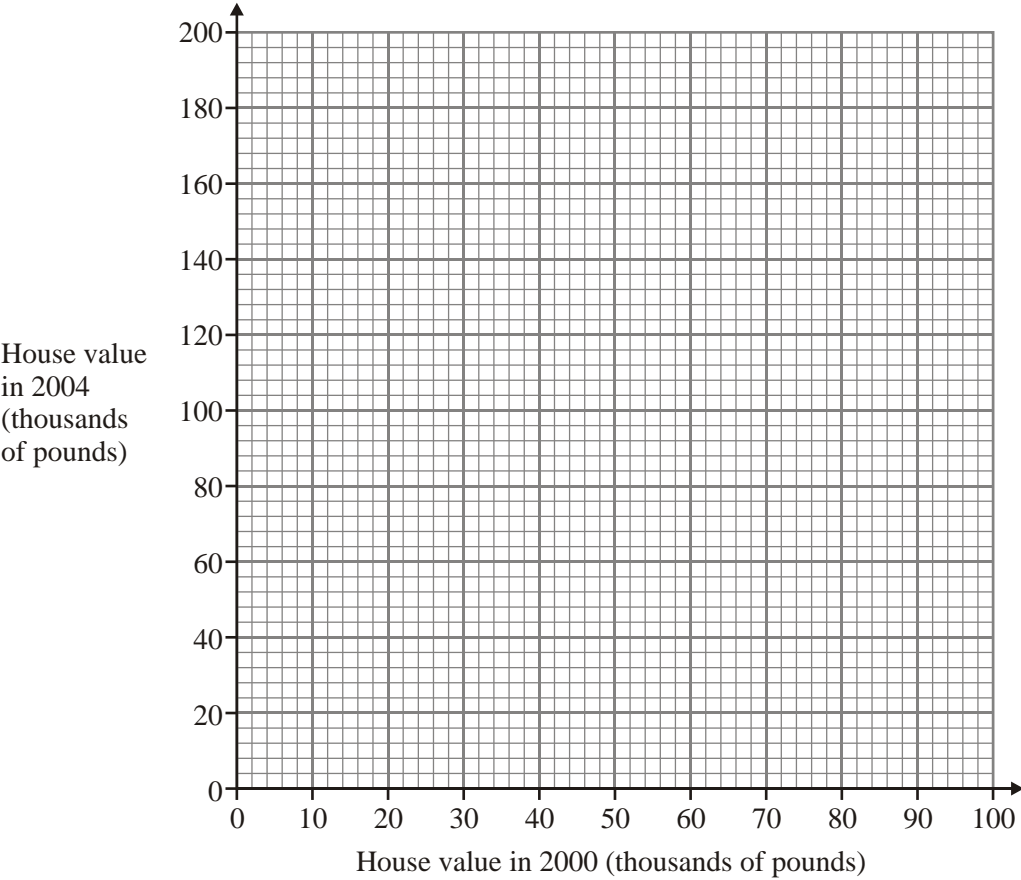
……………………………………………………………………………………………….

(1)
(Total 5 marks)

6. The value of six houses in 2000 is compared to the value of similar houses in 2004. Here are the results.

House value in 2000 (thousands of pounds)	20	30	40	60	70	90
House value in 2004 (thousands of pounds)	40	60	70	100	140	170

(a) Draw a scatter graph of these results.

(2)

(b) Describe the relationship shown in the scatter graph.

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....

(1)

(c) In 2000 a house was valued at £80 000. Estimate the value of a similar house in 2004.

....

Answer £ ....

(2)(Total 5 marks)

Success:	Target: