Name:

Exam Style Questions

Misleading Graphs

Corbettmaths

Equipment needed: Ruler, Pen, Protractor, Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

Video 160a

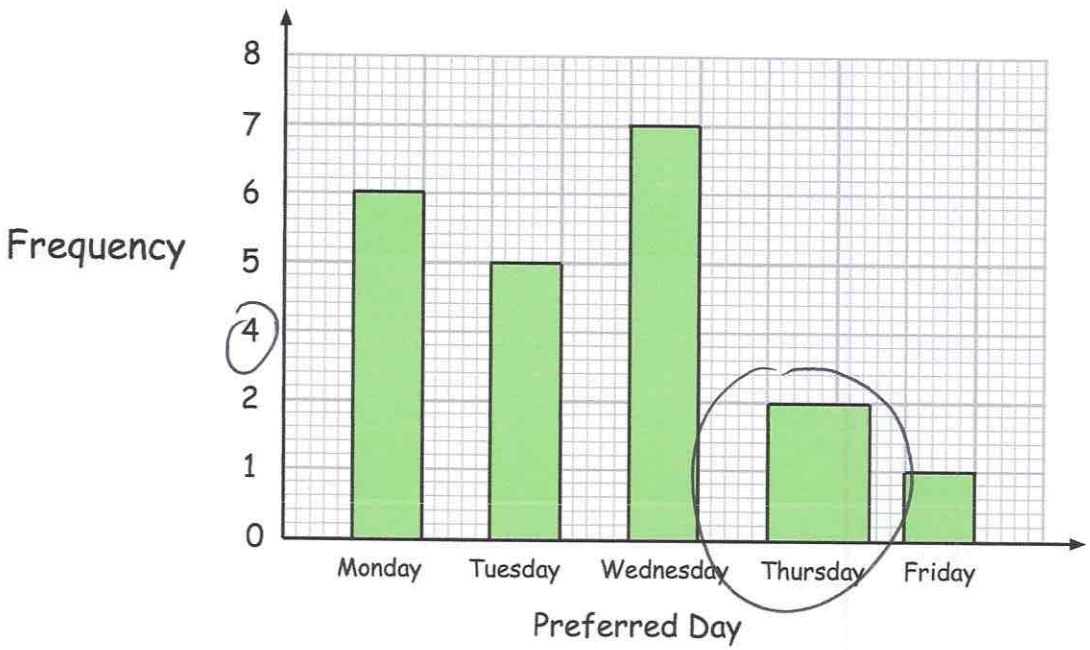
Answers and Video Solutions

1. Miss Kennedy asked a group of students on which day they wanted a new club to take place.

The table shows the results.

Day	Frequency
Monday	6
Tuesday	5
Wednesday	7
Thursday	2
Friday	1

Miss Kennedy drew this bar chart to show the preferred day.



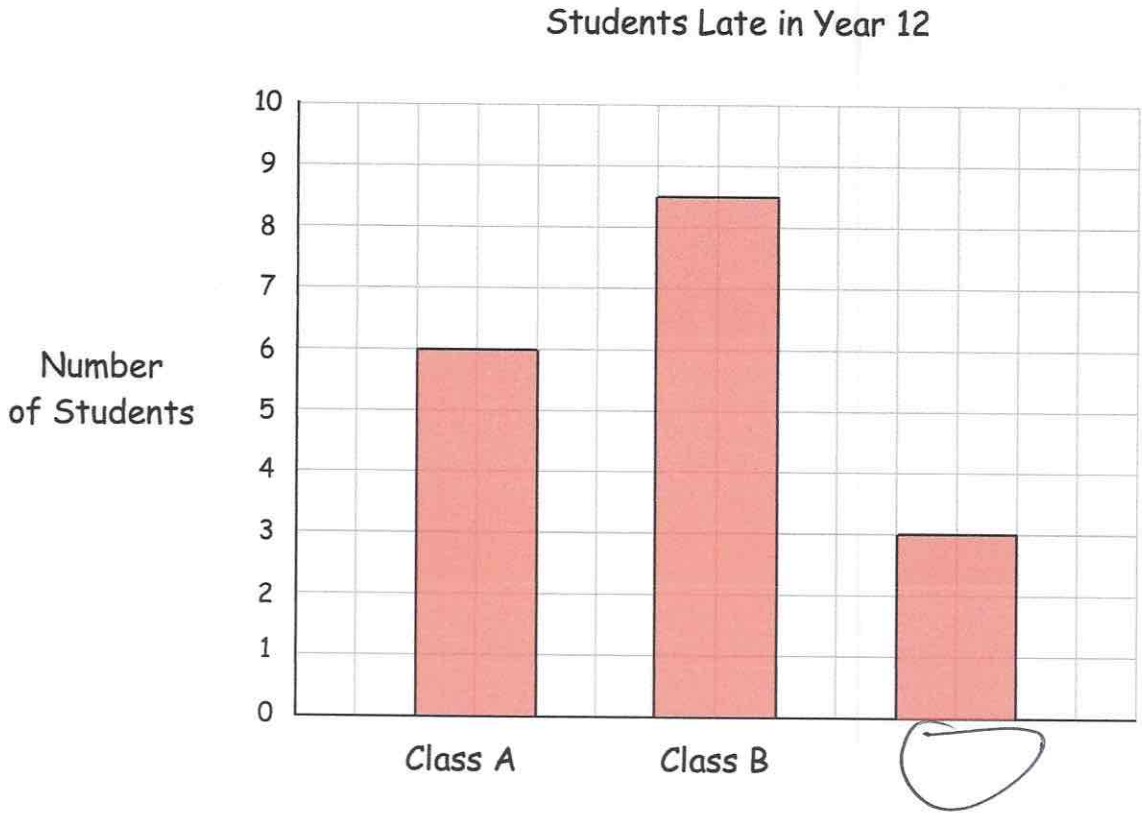
Write down **two** things that are wrong with the bar chart.

Mistake 1 The bar for Thursday is wider than the others.

Mistake 2 The vertical scale leaves out the number 3. It goes 0, 1, 2 and then 4.

(2)

2. The bar chart shows information about the number of Year 12 students late on Monday.



Make **two** criticisms of the bar chart.

Criticism 1 The third class is not labelled.

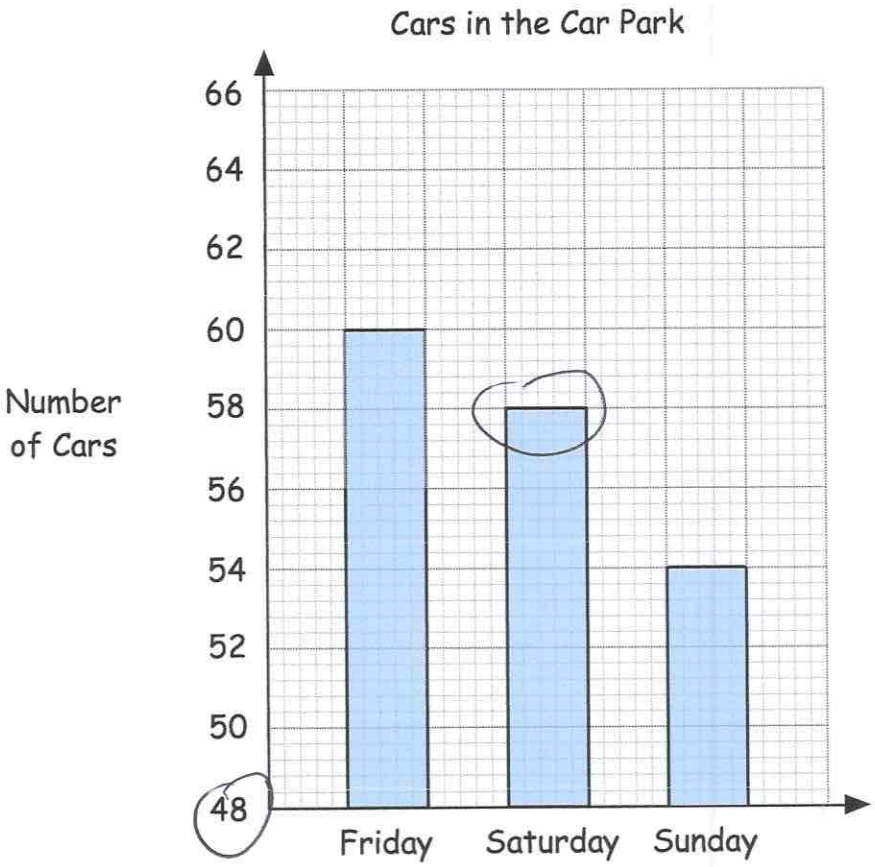
Criticism 2 Class B says that 8.5 students were late - that is not possible.

(2)

3. Alexandra records the number of cars in a car park over three days.

Day	Number of Cars
Friday	60
Saturday	57
Sunday	54

She uses this information to draw a bar chart.



Write down **two** mistakes that she has made.

Mistake 1 The vertical scales starts at 48.

Mistake 2 The height of the Saturday bar is incorrect. It should be 57.

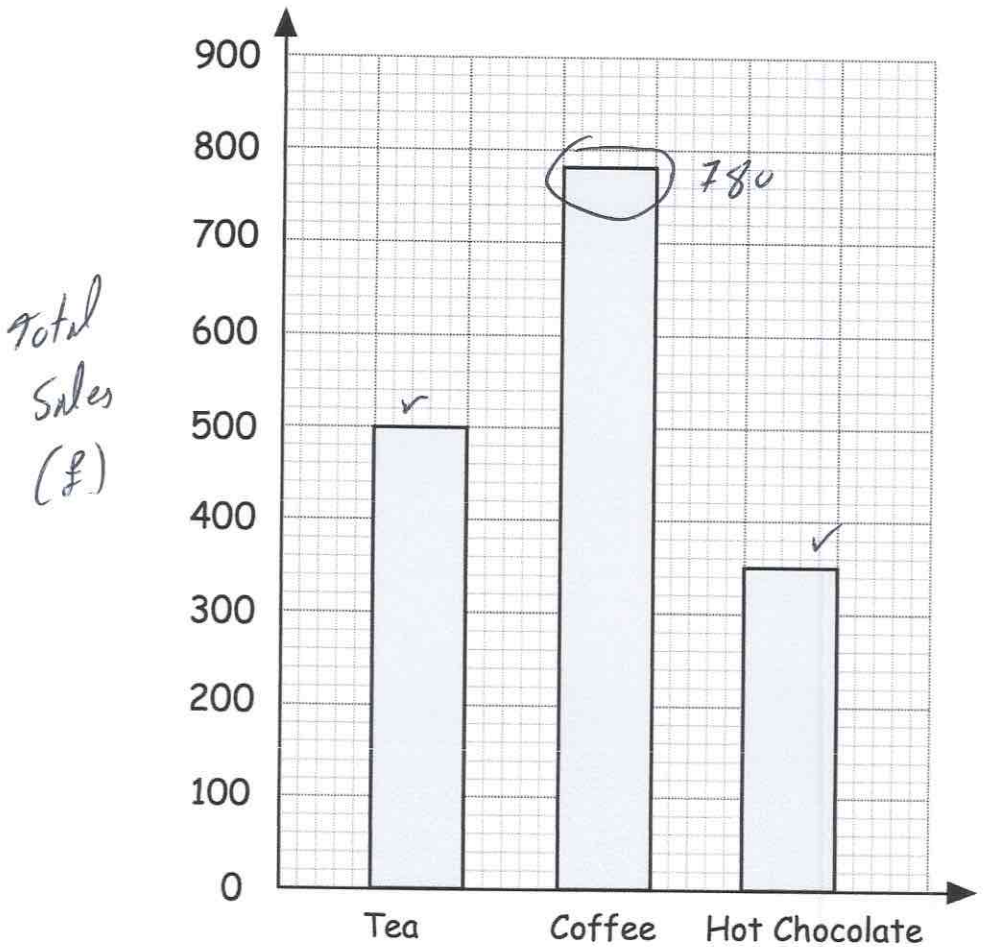
(2)

4. Emily owns a catering van.

The table shows her total sales of tea, coffee and hot chocolate last month.

Drink	Total Sales (£)
Tea	500
Coffee	790
Hot Chocolate	350

Emily drew this bar chart to represent the information in the table.



Make **two** criticisms of the bar chart.

Criticism 1 Coffee should have a height of 790.

The bar goes up to 780.

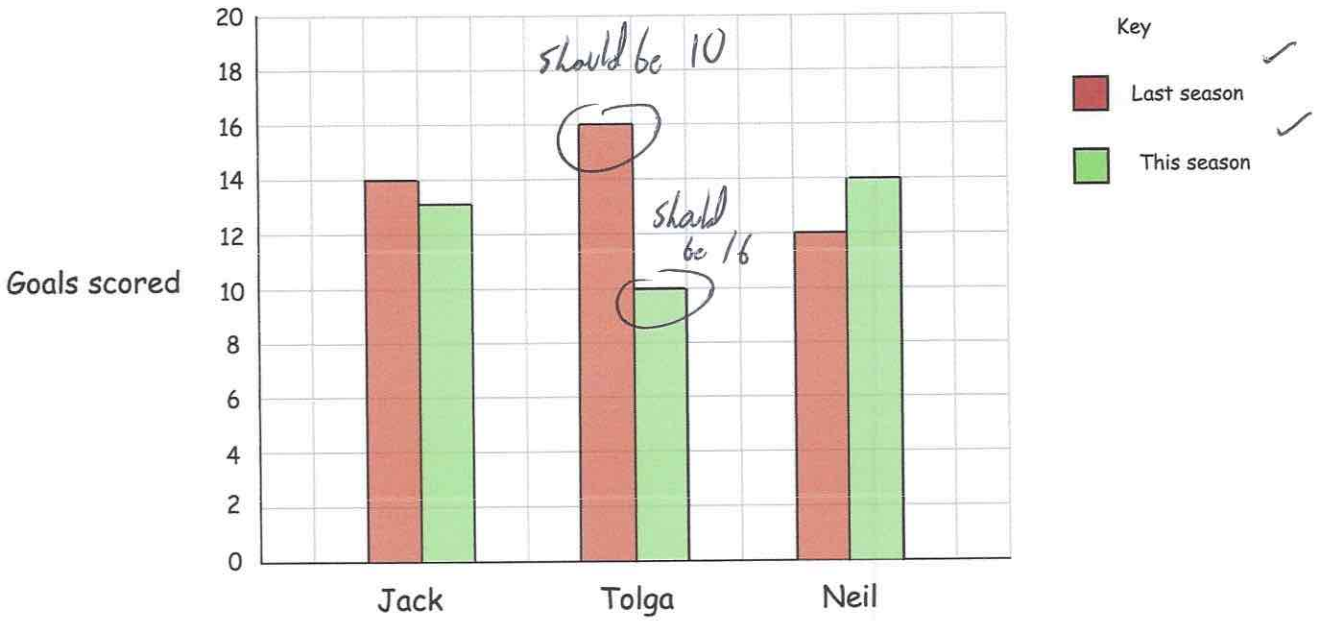
Criticism 2 The vertical bar is not labelled.

(2)

5. The table shows the number of goals Jack, Tolga and Neil scored last season and this season.

Footballer	Goals scored **last** season	Goals scored **this** season
Jack	14	13
Tolga	10	16
Neil	12	14

The coach then drew the dual bar chart below for this information.



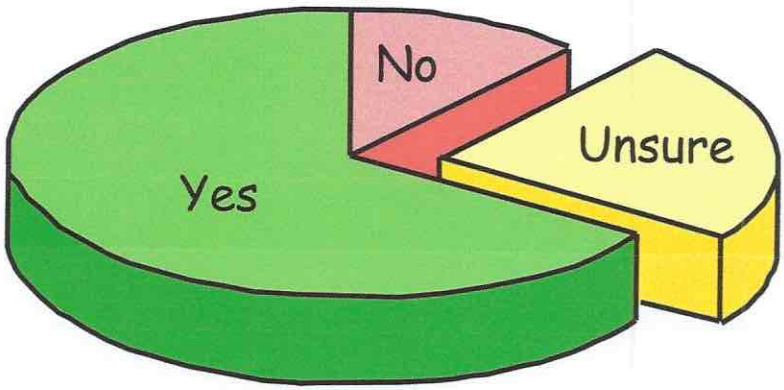
Write down one thing that is wrong with this dual bar chart.

The heights of the bars for Tolga are the wrong way round. It should be 10 then 16.

(1)

6. The people living in a street were asked if they wanted new street lights.
They could answer: yes, no or unsure.

This pie chart shows the results.



Explain why the diagram is misleading.

3D Pie charts can be misleading as the sectors at the front are more prominent than those at the back.

(1)

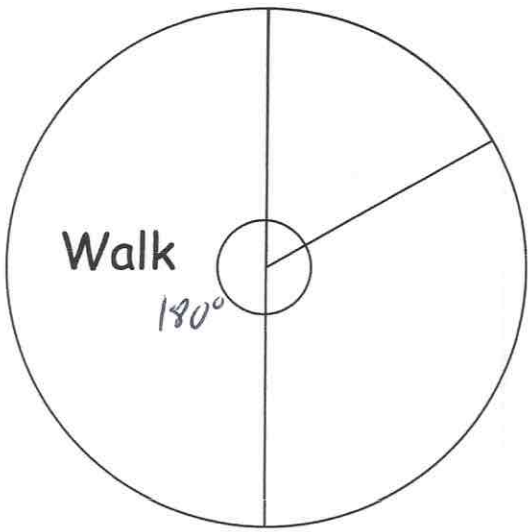
7. A headteacher asked the 300 students in her school how they travelled to school.

Here are the results.

Method of Transport	Number of Students
Bus	50
Car	70
Walk	180

300

This pie chart was drawn for the information in the table.



Make **two** criticisms of the pie chart.

Criticism 1 The sectors for Car and bus are not labelled.

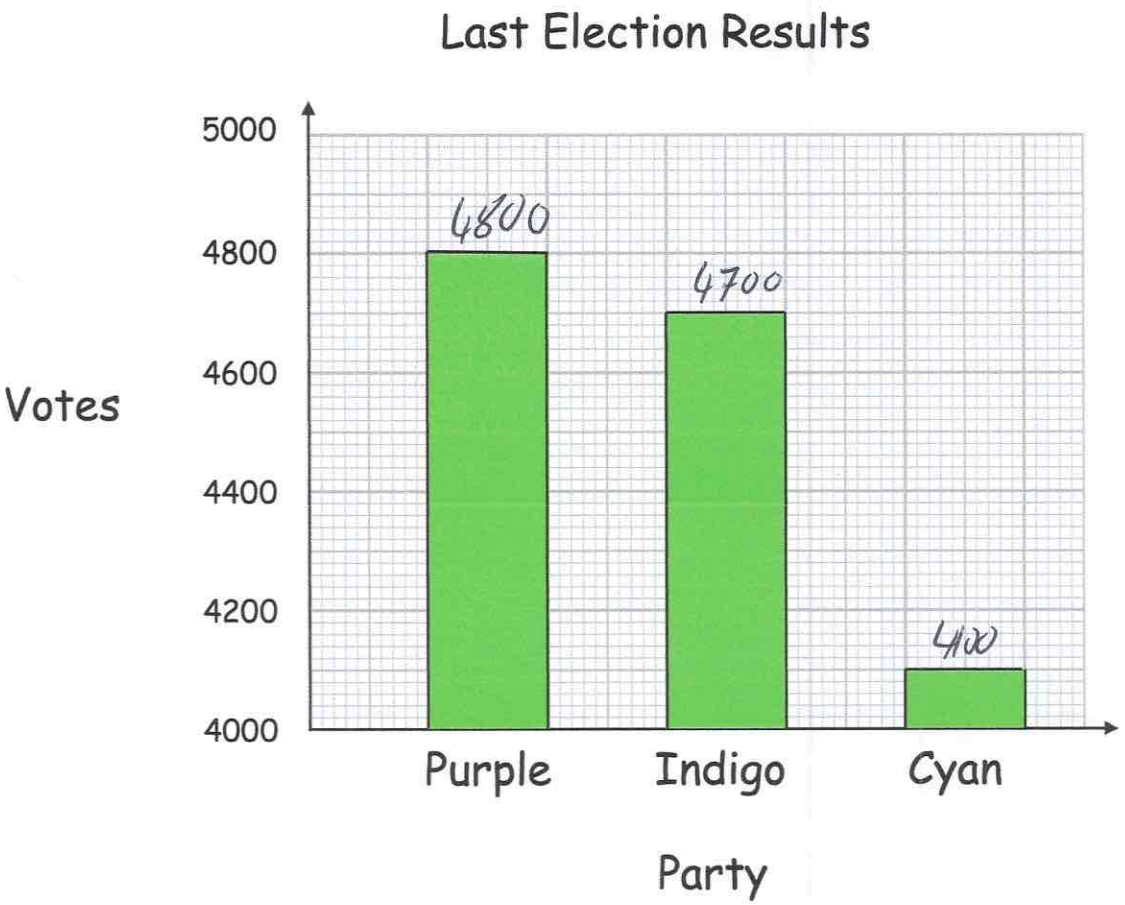
Criticism 2 The angles for the sectors seem incorrect. Walk should not be 180° (as 180 > 150) it should be 216°.

(2)

8. There is an upcoming election in an area.
Harry received a leaflet in the post that had the message:

"Vote for the Indigo Party, we are the only party that can beat the Purple Party."

There was also this bar chart.



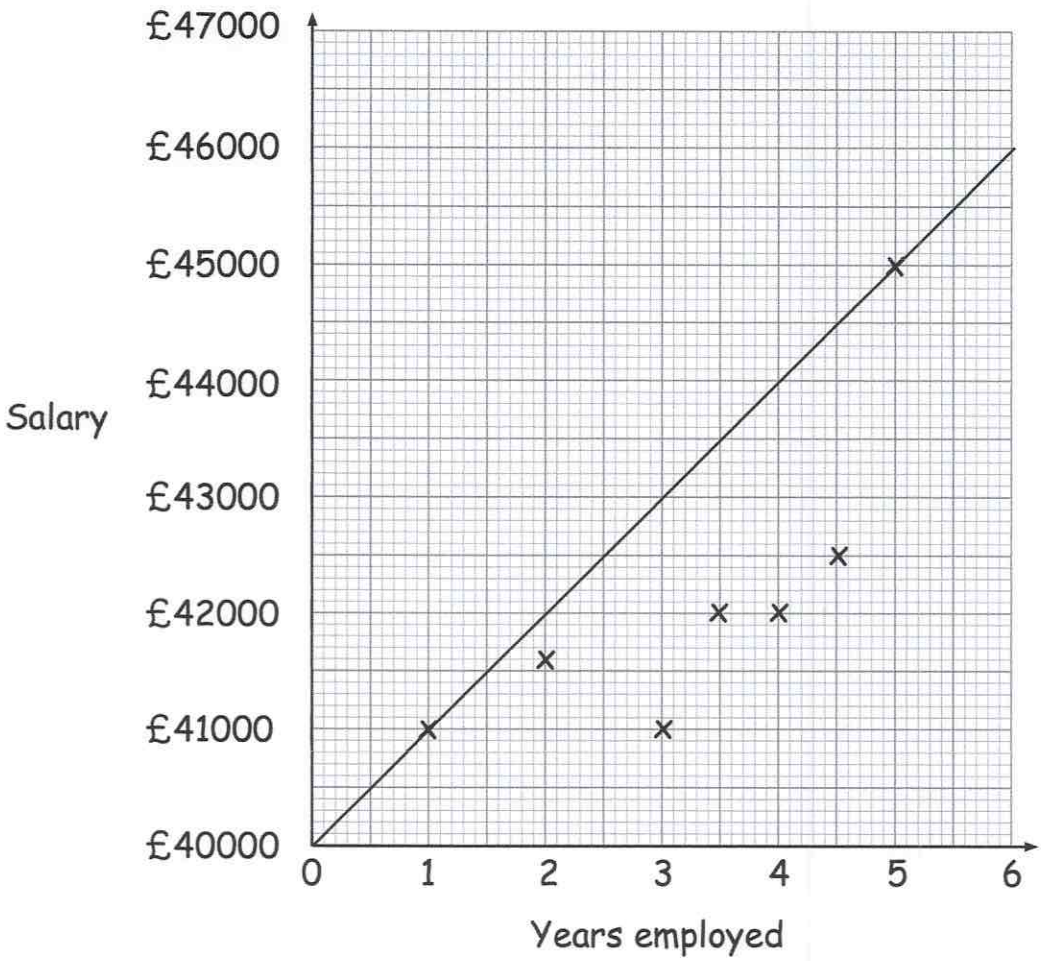
Explain why the leaflet is misleading.

The vertical scale implies that the Cyan Party are significantly behind the Indigo and Purple Parties. However 4100 votes is not that far away from 4700 and 4800.

(2)

9. The scatter graph shows information about the salaries received by 7 employees and how long they have been employed by a company.

A line of best fit has been drawn on the scatter graph.



The owner of the company claims the scatter graph shows that the salaries of the employees increases by £1000 each year they are employed.

Do you agree?
Explain your answer.

No, the line of best fit is too steep as 5 employees are significantly below it.

(2)