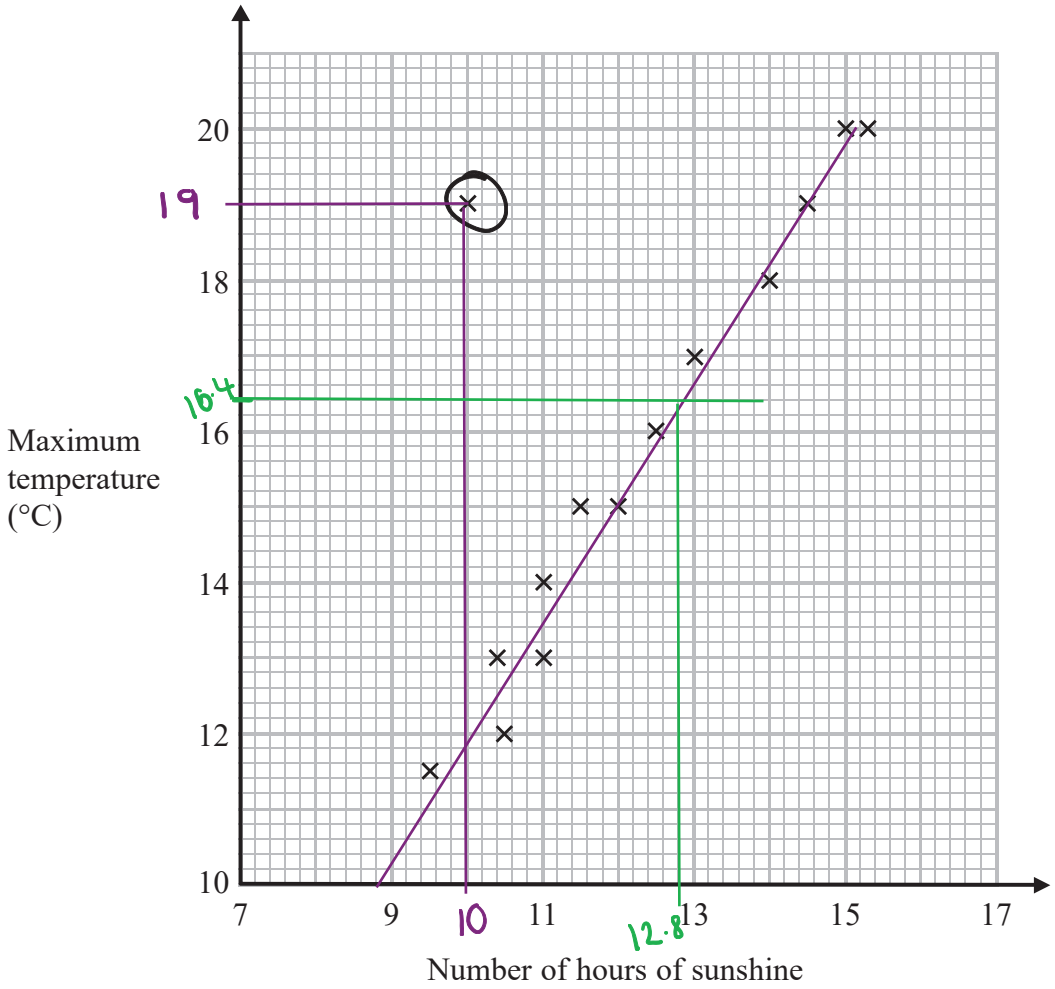
1. The scatter graph shows the maximum temperature and the number of hours of sunshine in fourteen British towns on one day.



One of the points is an outlier. → "lies outside"

(a) Write down the coordinates of this point.

(10 , 19)

(1)

(b) For all the other points write down the type of correlation.

positive.

(1)

On the same day, in another British town, the maximum temperature was 16.4 °C.

(c) Estimate the number of hours of sunshine in this town on this day.

12.8 hours

(2)

A weatherman says,

"Temperatures are higher on days when there is more sunshine."

(d) Does the scatter graph support what the weatherman says?
Give a reason for your answer.

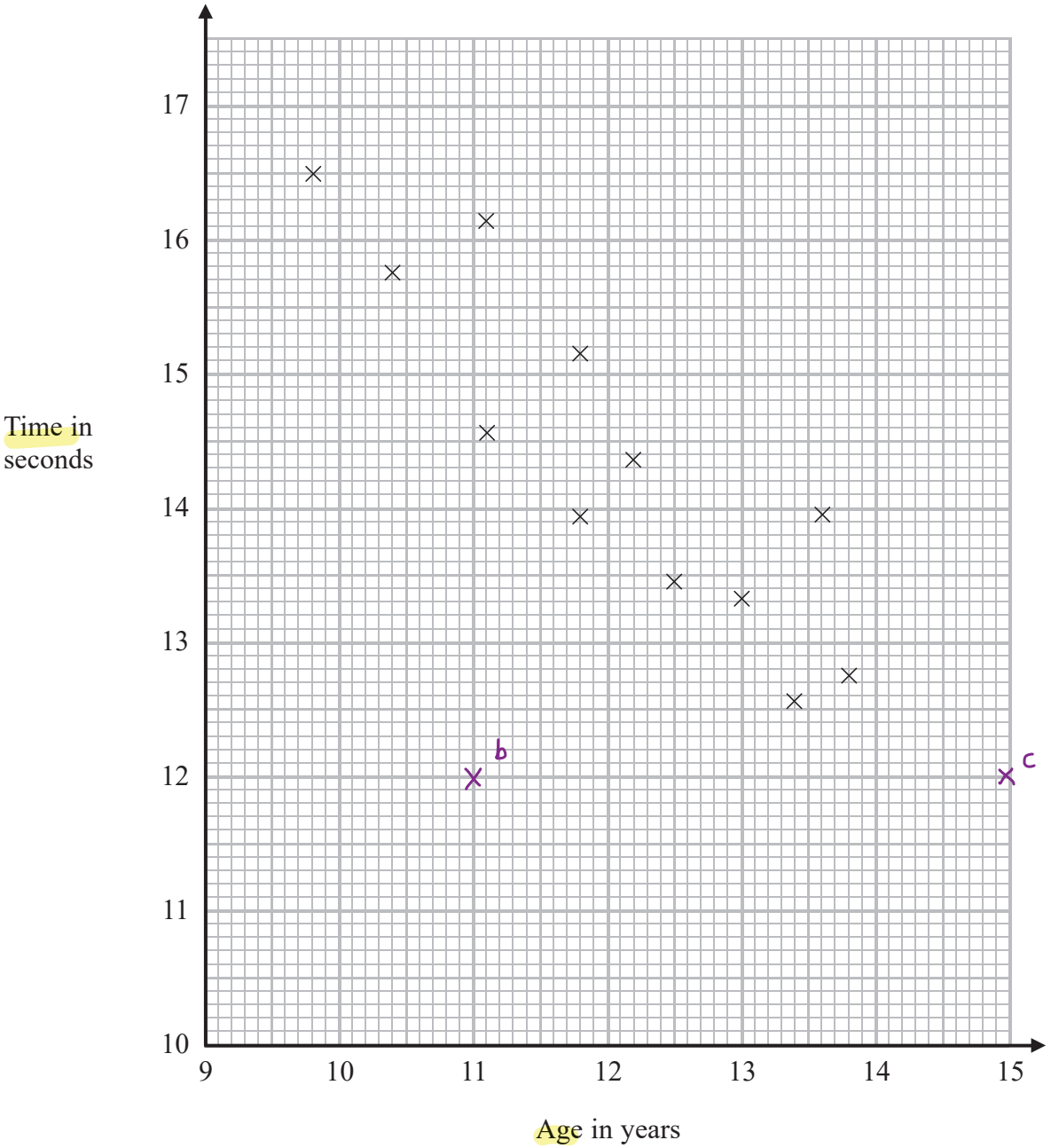
Yes, as the majority of points for higher temperature appear when there are more hours of sunshine.

(1)

(Total for Question is 5 marks)

2. The scatter diagram shows information about 12 girls.

It shows the age of each girl and the best time she takes to run 100 metres.



(a) Write down the type of correlation.

The general trend = as age increases, time decreases

negative

(1)

The line of best fit has a negative gradient.

Kristina is 11 years old.
Her best time to run 100 metres is 12 seconds.

doesn't fit trend – far from other points / line of best fit

The point representing this information would be an outlier on the scatter diagram.

(b) Explain why.

It is not in line with the trend of the other points

(1)

Debbie is 15 years old.
Debbie says,

Extrapolation → extending graph beyond plotted points is unreliable as we can't be sure that the trend will continue

"The scatter diagram shows I should take less than 12 seconds to run 100 metres."

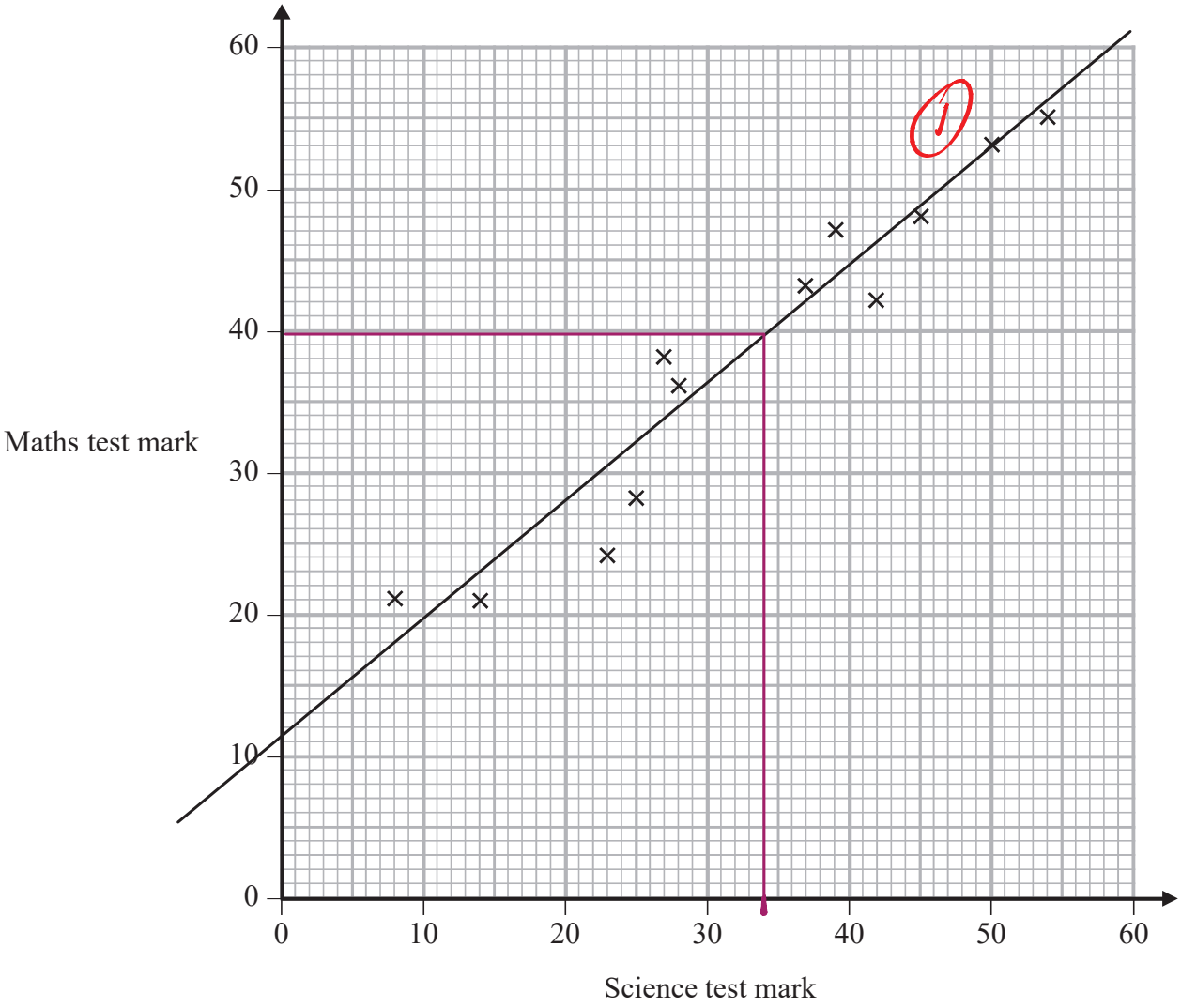
(c) Comment on what Debbie says.

The point would be outside of the range of the scatter diagram

(1)

(Total for Question is 3 marks)

3. The scatter graph shows information about the marks a group of students got in a Science test and in a Maths test.

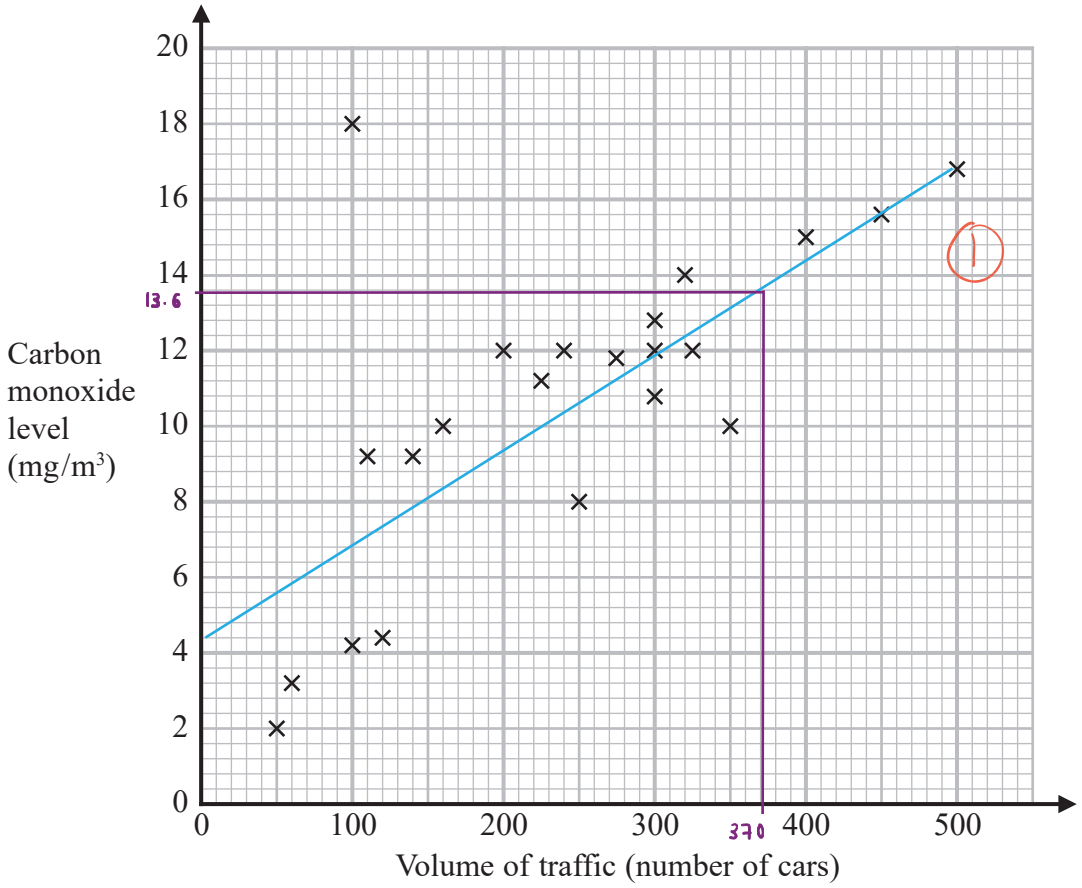


Jamie got a mark of 34 in the Science test.

Using the scatter graph, find an estimate for Jamie's mark in the Maths test.

40 ✓

4. The scatter graph shows information about the volume of traffic and the carbon monoxide level at a point on a road each day for 22 days.



One point is an outlier.

(a) Write down the coordinates of this point.

outlier = a point that lies outside the overall pattern in a set of data.

(100 , 18)

(1)

For another day, 370 cars pass the point on the road.

(b) Estimate the carbon monoxide level for this day.

13.6 mg/m³

(2)

Alfie says,

"Because there is an outlier, there is no correlation."

(c) Is Alfie correct?
You must give a reason for your answer.

No, because we can ignore the outlier. (1)

(1)

(Total for Question is 4 marks)