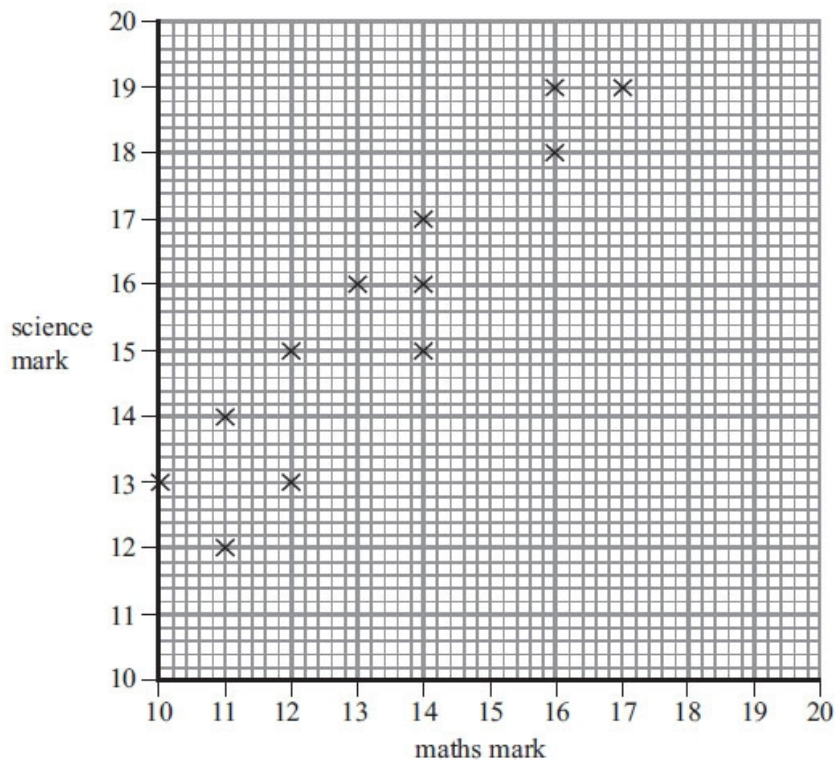


S083 Scatter graphs

Q1.

Mr Kent's students did a maths test and a science test.
The scatter graph shows the marks of 12 of these students.



The table shows the marks of two more students.

Name	maths	science
Masood	12	14
Nimer	17	20

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does this scatter graph show?

.....

(1)

David did the maths test.
He was absent for the science test.

David's mark in the maths test was 15

(c) Estimate a science mark for David.

.....

(2)

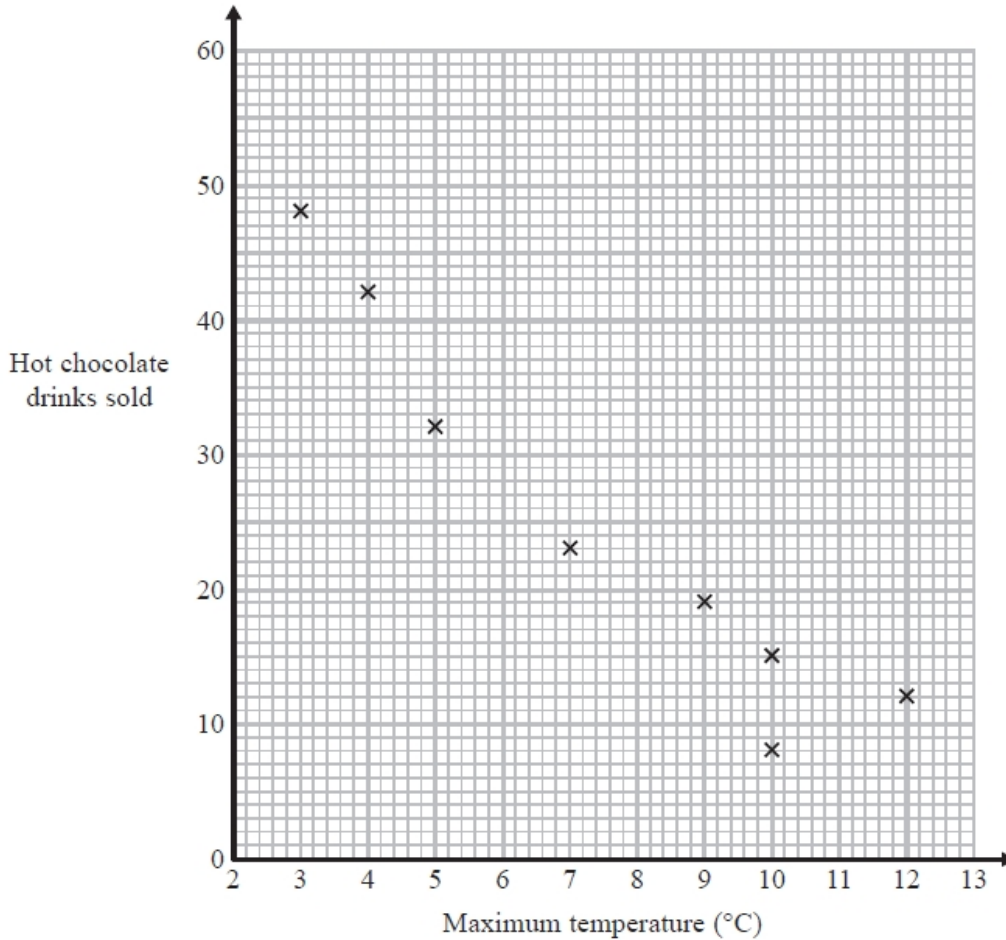
(Total for Question is 4 marks)

Q2.

Carlos has a cafe in Clacton.

Each day, he records the maximum temperature in degrees Celsius ($^{\circ}\text{C}$) in Clacton and the number of hot chocolate drinks sold.

The scatter graph shows this information.



On another day the maximum temperature was 6°C and 35 hot chocolate drinks were sold.

(a) Show this information on the scatter graph.

(1)

(b) Describe the relationship between the maximum temperature and the number of hot chocolate drinks sold.

.....

(1)

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

(1)

One day the maximum temperature was 8°C .

(d) Use your line of best fit to estimate how many hot chocolate drinks were sold.

.....

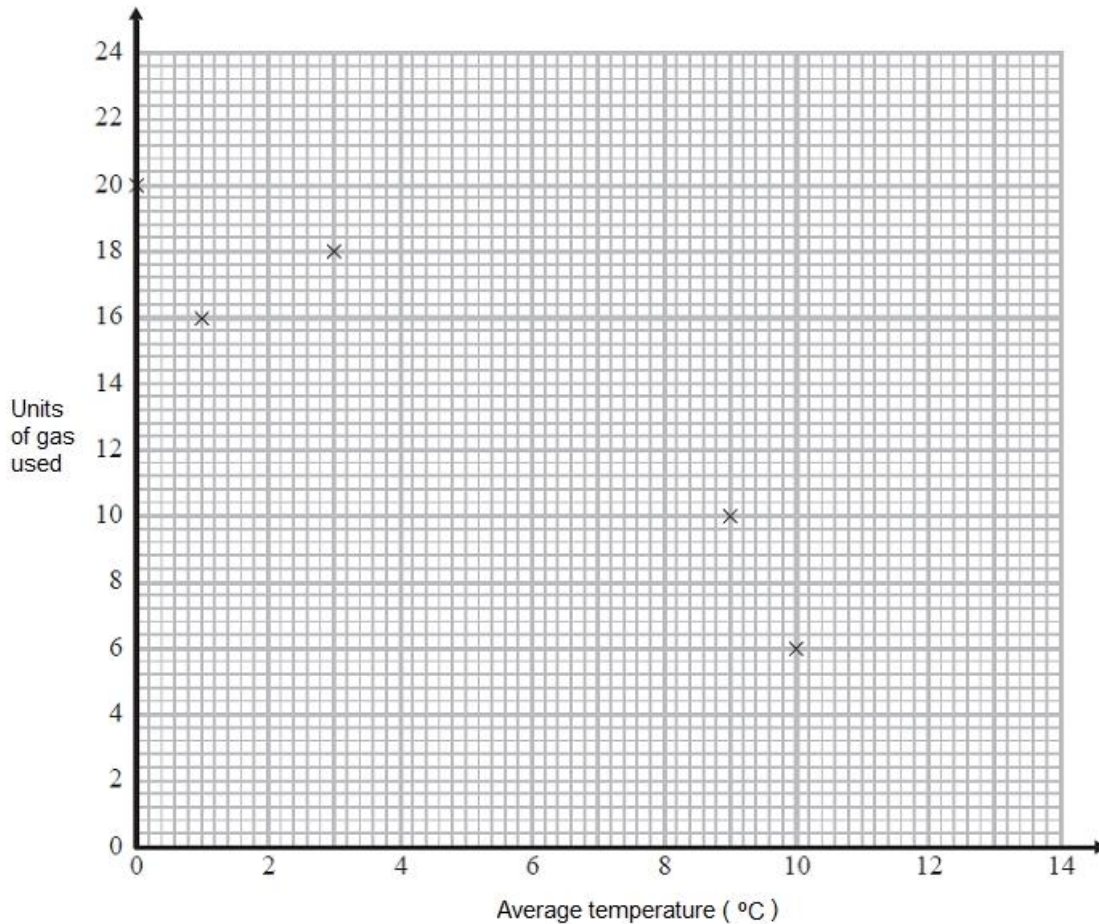
(1)

(Total for Question is 4 marks)

Q3.

The table shows the average temperature on each of seven days and the number of units of gas used to heat a house on these days.

Average temperature (°C)	0	1	3	9	10	12	13
Units of gas used	20	16	18	10	6	6	2



(a) Complete the scatter graph to show the information in the table.
The first 5 points have been plotted for you.

(1)

(b) Describe the relationship between the average temperature and the number of units of gas used.

.....

(1)

(c) Estimate the average temperature on a day when 12 units of gas are used.

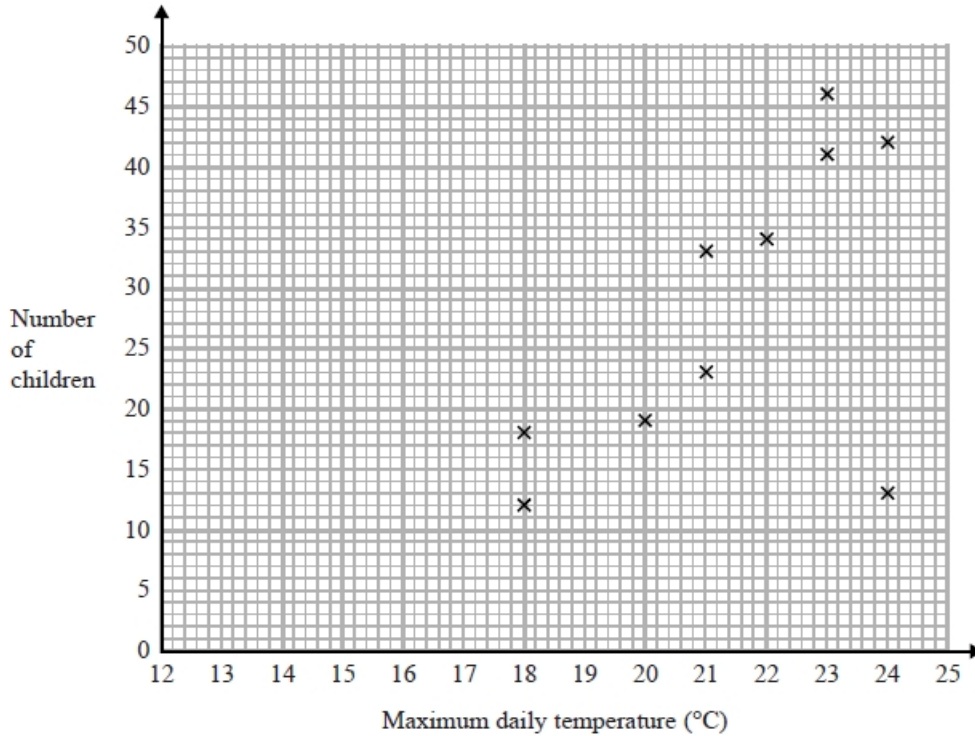
.....°C

(2)

(Total for Question is 4 marks)

Q4.

Jean records the maximum daily temperature each day for 10 days. She also records the number of children going to a paddling pool for each of these days. She draws this scatter graph for her information.



Jean's information for one of these days is an outlier on the scatter graph.

(a) Give a possible reason for this.

.....

(1)

(b) What type of correlation does the scatter graph show?

.....

(1)

On the 11th day, the maximum daily temperature was 19°C.

(c) Write down an estimate for the number of children going to the paddling pool on the 11th day.

.....

(1)

It would not be sensible to use the scatter graph to predict the number of children going to the paddling pool on a day when the maximum daily temperature was 13°C.

(d) Give a reason why.

.....

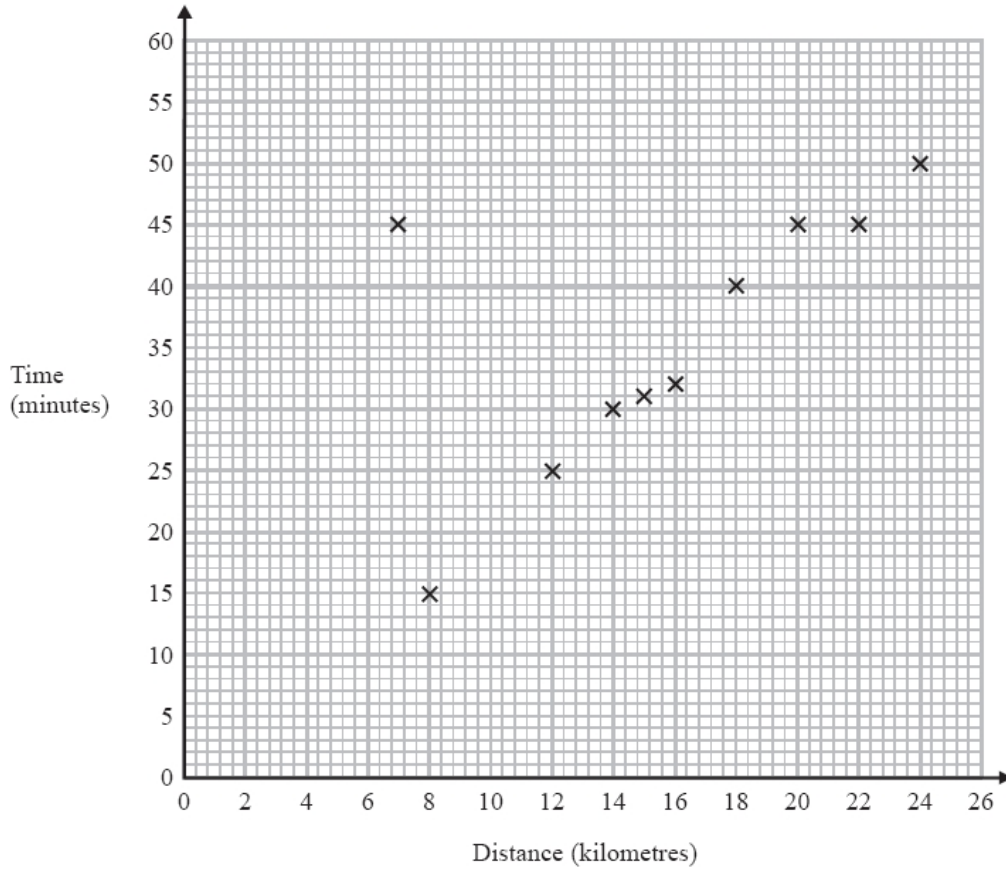
.....

(1)

(Total for question = 4 marks)

Q5.

A delivery driver records for each delivery the distance he drives and the time taken. The scatter graph shows this information.



For another delivery he drives 22 kilometres and takes 50 minutes.

(a) Show this information on the scatter graph.

(1)

(b) What type of correlation does the scatter graph show?

.....

(1)

The driver has to drive a distance of 10 km for his next delivery.

(c) Estimate the time taken for this delivery.

..... minutes

(2)

During one of the deliveries, the driver was delayed by road works.

(d) Using the graph write down the time taken for this delivery.

..... minutes

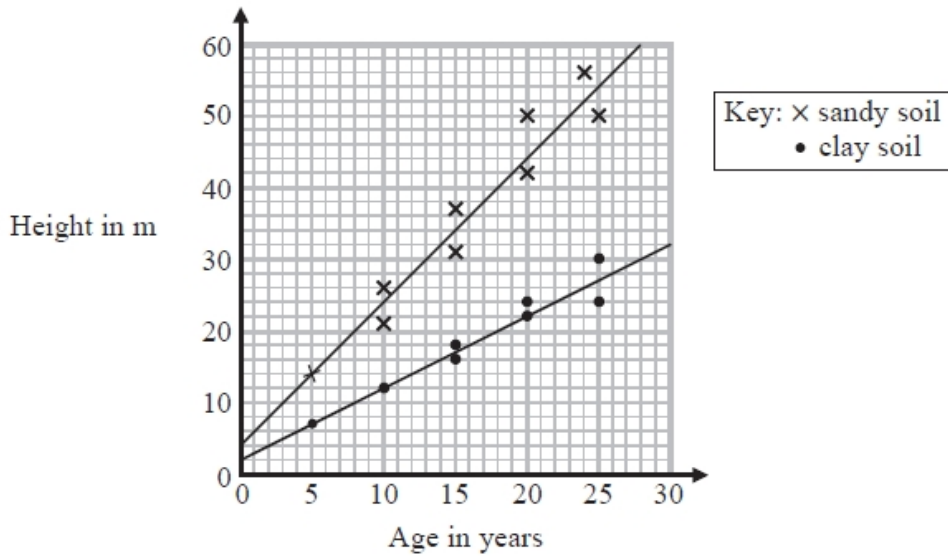
(1)

(Total for question = 5 marks)

Q6.

Bill wants to compare the heights of pine trees growing in sandy soil with the heights of pine trees growing in clay soil.

The scatter diagram gives some information about the heights and the ages of some pine trees.



(a) Describe the relationship between the height of pine trees and the age of pine trees growing in sandy soil.

.....

(1)

A pine tree growing in clay soil is 18 years old.

(b) Find an estimate for the height of this tree.

.....m

(1)

A pine tree is growing in sandy soil.

(c) Work out an estimate for how much the height of this tree increases in a year.

.....m

(2)

(d) Compare the rate of increase of the height of trees growing in clay soil with the rate of increase of the height of trees growing in sandy soil.

.....

.....

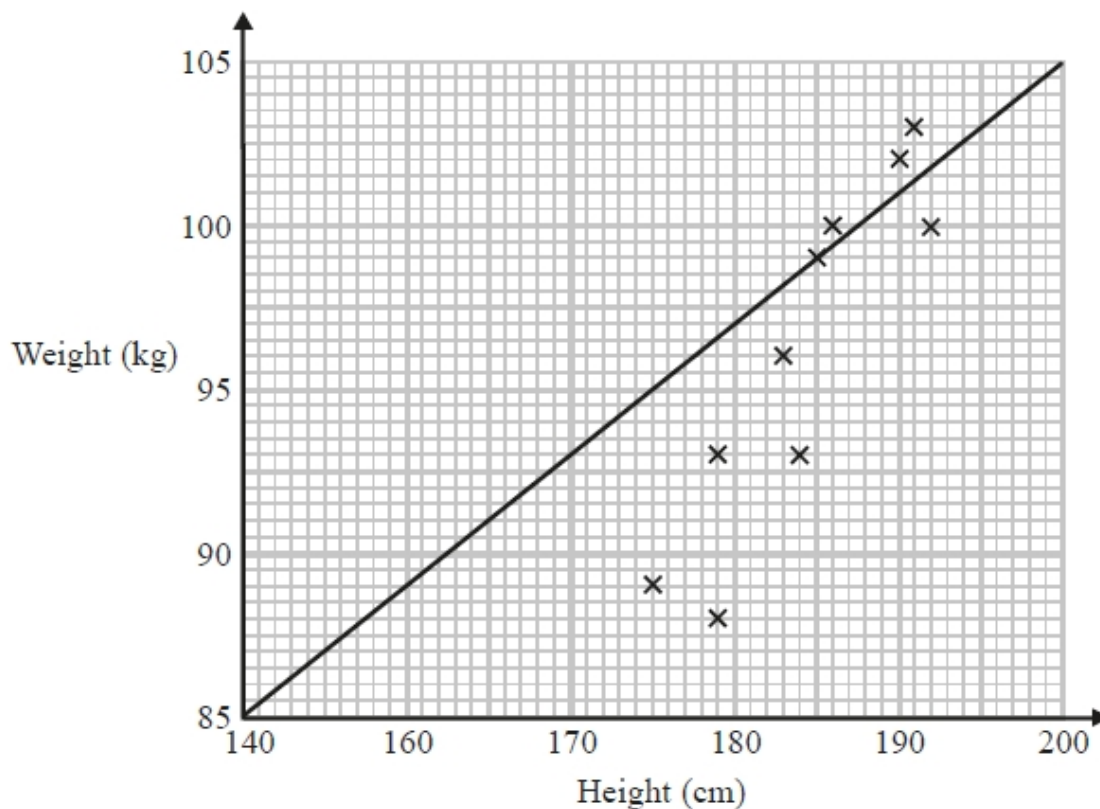
(2)

(Total for question = 6 marks)

Q7.

Sean has information about the height, in cm, and the weight, in kg, of each of ten rugby players. He is asked to draw a scatter graph and a line of best fit for this information.

Here is his answer.



Sean has plotted the points accurately.

Write down two things that are wrong with his answer.

1

.....

2

.....

(Total for question = 2 marks)