Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics
SCATTER GRAPHS

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

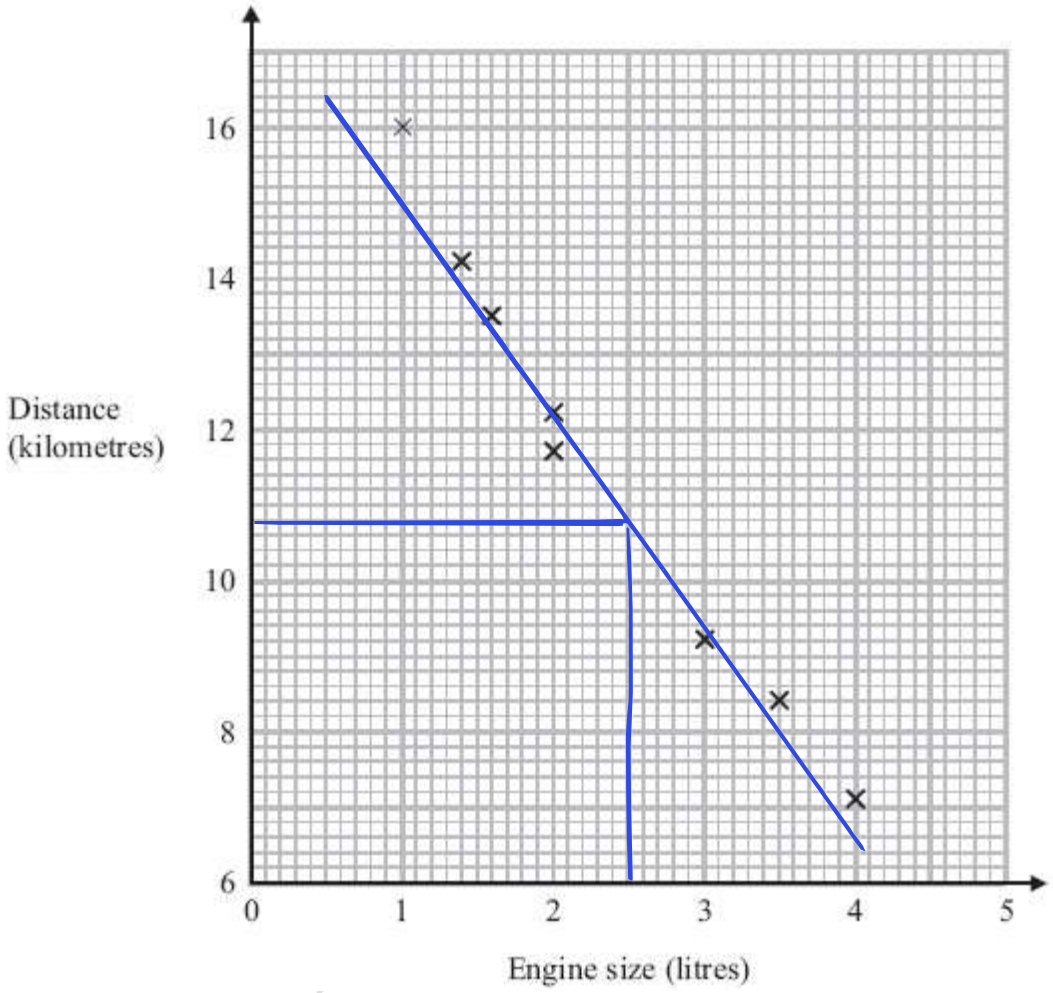
Advice:

- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

NO CALCULATOR ALLOWED

NAME:	

1. The scatter graph shows some information about 8 cars.
For each car it shows the engine size, in litres, and the distance, in kilometres, the car travels on one litre of petrol.



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

Negative

(1)

A different car of the same type has an engine size of 2.5 litres.

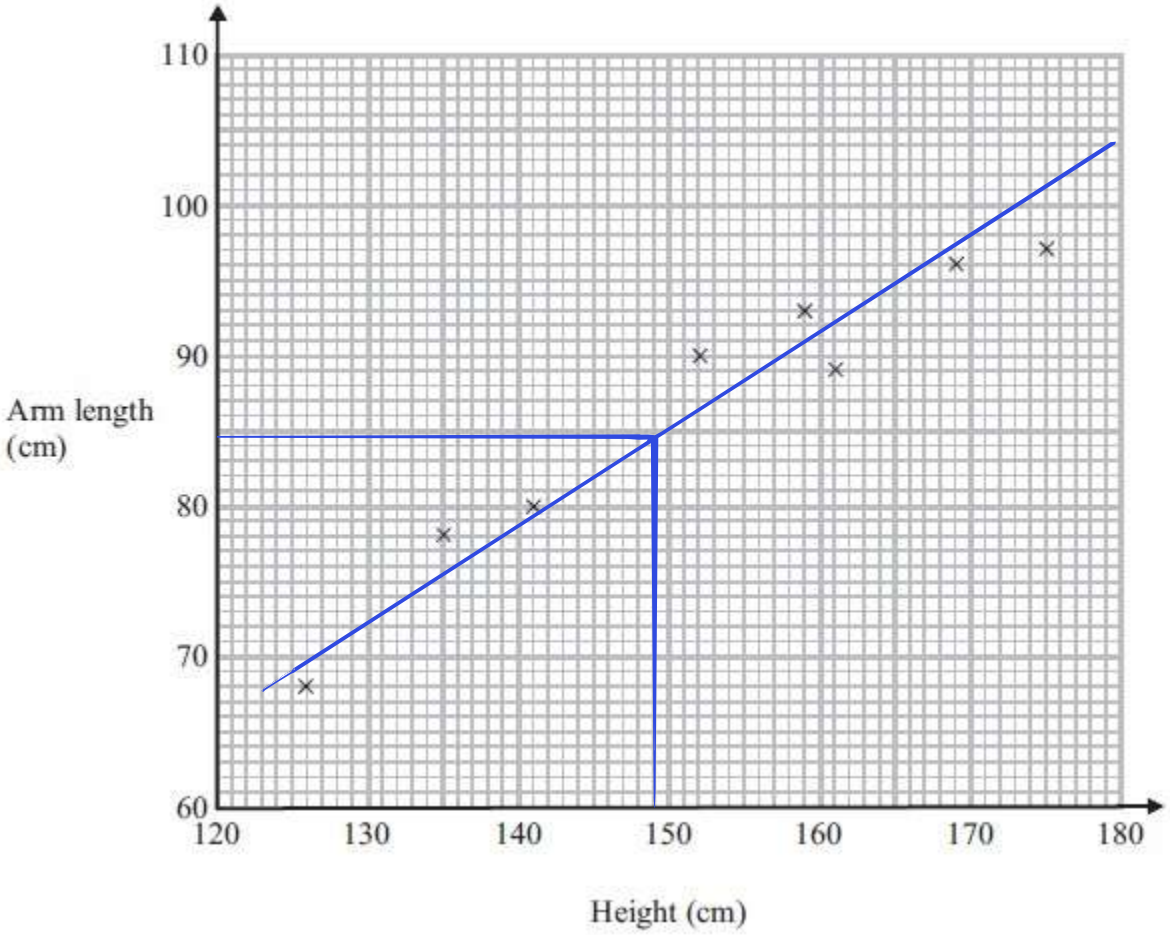
(b) Estimate the distance travelled on one litre of petrol by this car.

11 kilometres

(2)

(3 marks)

2. The scatter graph shows information about the height and the arm length of each of 8 students in Year 11.



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

Positive

.....

(1)

A different student in Year 11 has a height of 148 cm.

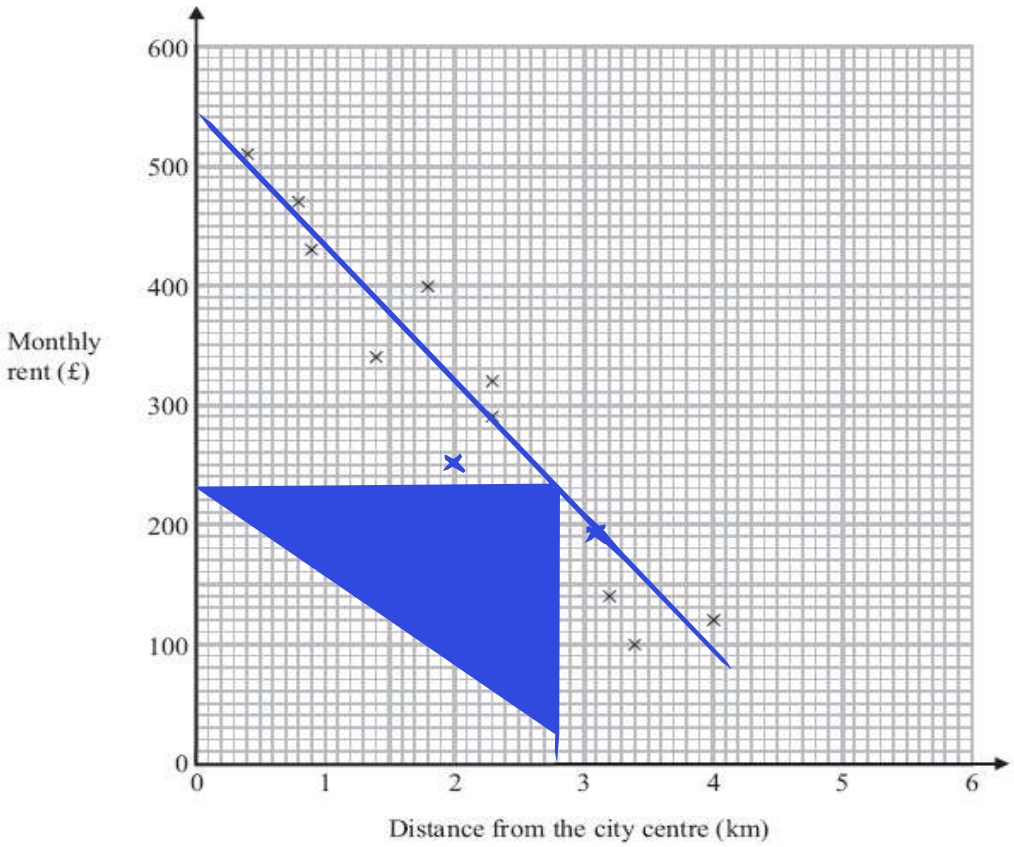
(b) Estimate the arm length of this student.

85 cm

(2)

(3 marks)

3. The scatter graph shows information about 10 apartments in a city.
The graph shows the distance from the city centre and the monthly rent of each apartment.



The table shows the distance from the city centre and the monthly rent for two other apartments.

Distance from the city centre (km)	2	3.1
Monthly rent (£)	250	190

(a) On the scatter graph, plot the information from the table.

(1)

(b) Describe the relationship between the distance from the city centre and the monthly rent

The further you are from the city centre, the cheaper the rent will be

(1)

An apartment is 2.8 km from the city centre.

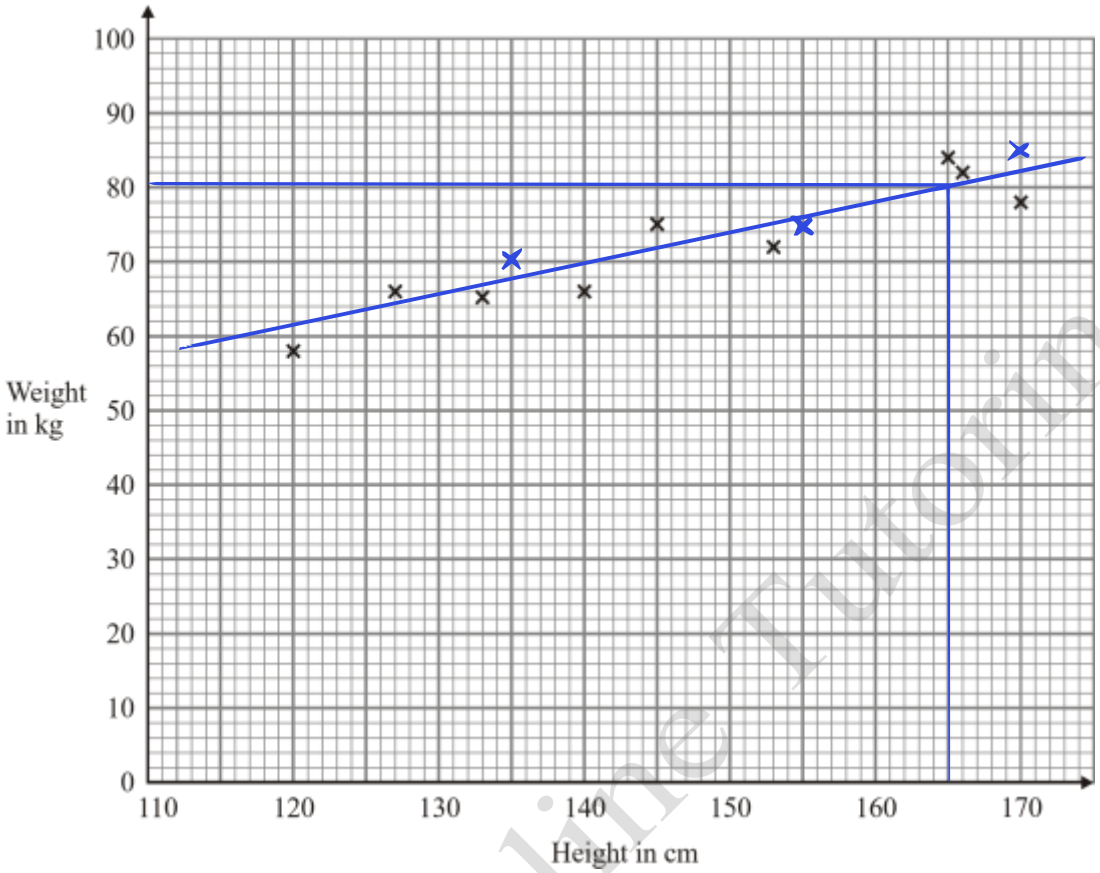
(c) Find an estimate for the monthly rent for this apartment.

£ 230

(2)

(4 marks)

4. The scatter graph shows information about the height and the weight for nine students.



The table shows the height and the weight for three more students.

Height in cm	135	155	170
Weight in kg	70	75	85

(a) On the scatter graph, plot the information from the table.

(1)

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

Positive

(1)

(c) The weight of another student is 80 kg.

Estimate the height of this student.

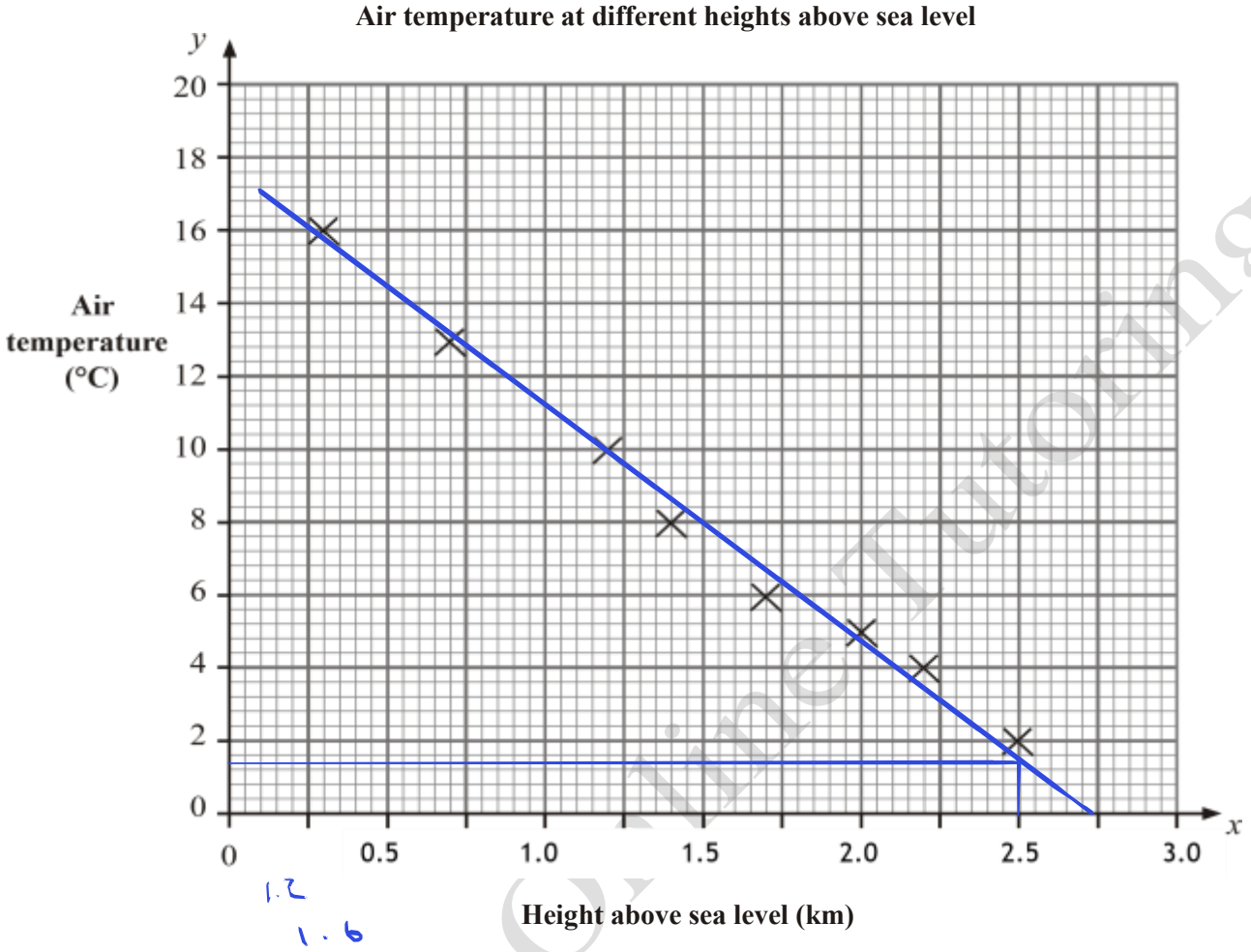
165 cm

(2)

(4 marks)

5.

On a particular day, a scientist recorded the air temperature at 8 different heights above sea level.
The scatter diagram shows the air temperature, y °C, at each of these heights, x km, above sea level.



(a) Using the scatter diagram, write down the air temperature recorded at a height of 2.5 km above sea level.

1.4 °C

(1)

(b) Describe the correlation between the air temperature and the height above sea level.

Negative

(1)

(c) Find an estimate of the height above sea level when the air temperature is 0 °C.

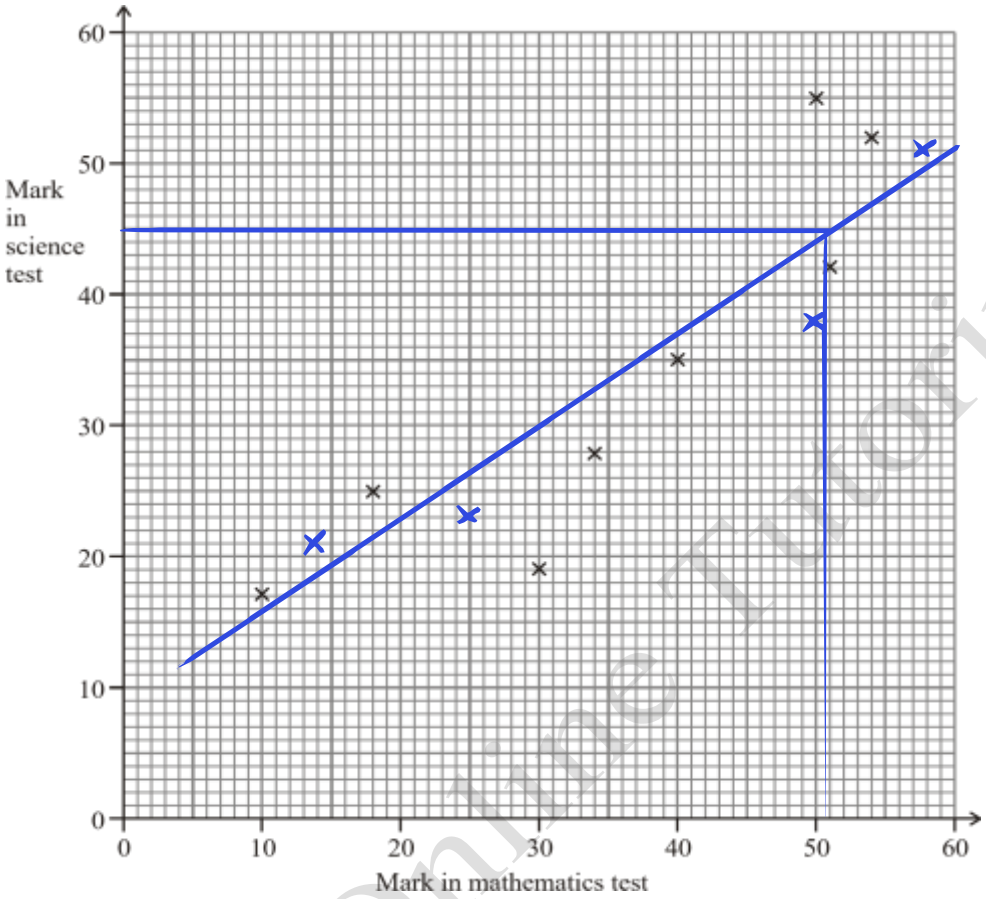
2.75 km

(2)

(4 marks)

6.

Some students took a mathematics test and a science test.
The scatter graph shows information about the test marks of eight students.



The table shows the test marks of four more students.

Mark in mathematics test	14	25	50	58
Mark in science test	21	23	38	51

(a) On the scatter graph, plot the information from the table.

(2)

(b) Describe the correlation between the marks in the mathematics test and the marks in the science test.

Positive

(1)

Josef was absent for the mathematics test but his mark in the science test was 45

(c) Estimate Josef's mark in the mathematics test.

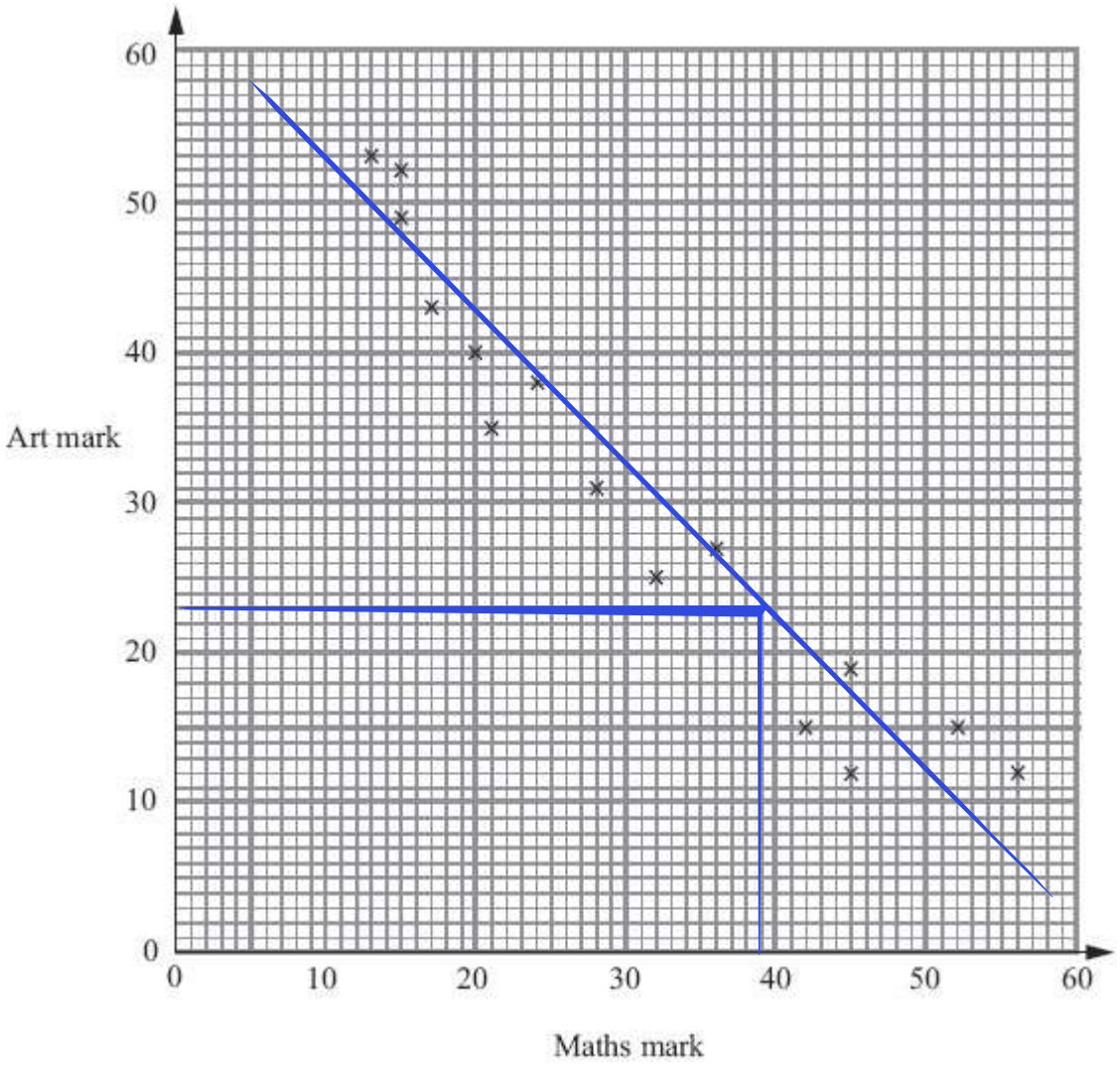
51

(2)

(5 marks)

7.

The scatter graph shows the maths mark and the art mark for each of 15 students.



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

(1)

Negative

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

(1)

Sarah has not got a maths mark.
Her art mark is 23

(c) Use your line of best fit to estimate a maths mark for Sarah.

(1)

39

(3 marks)