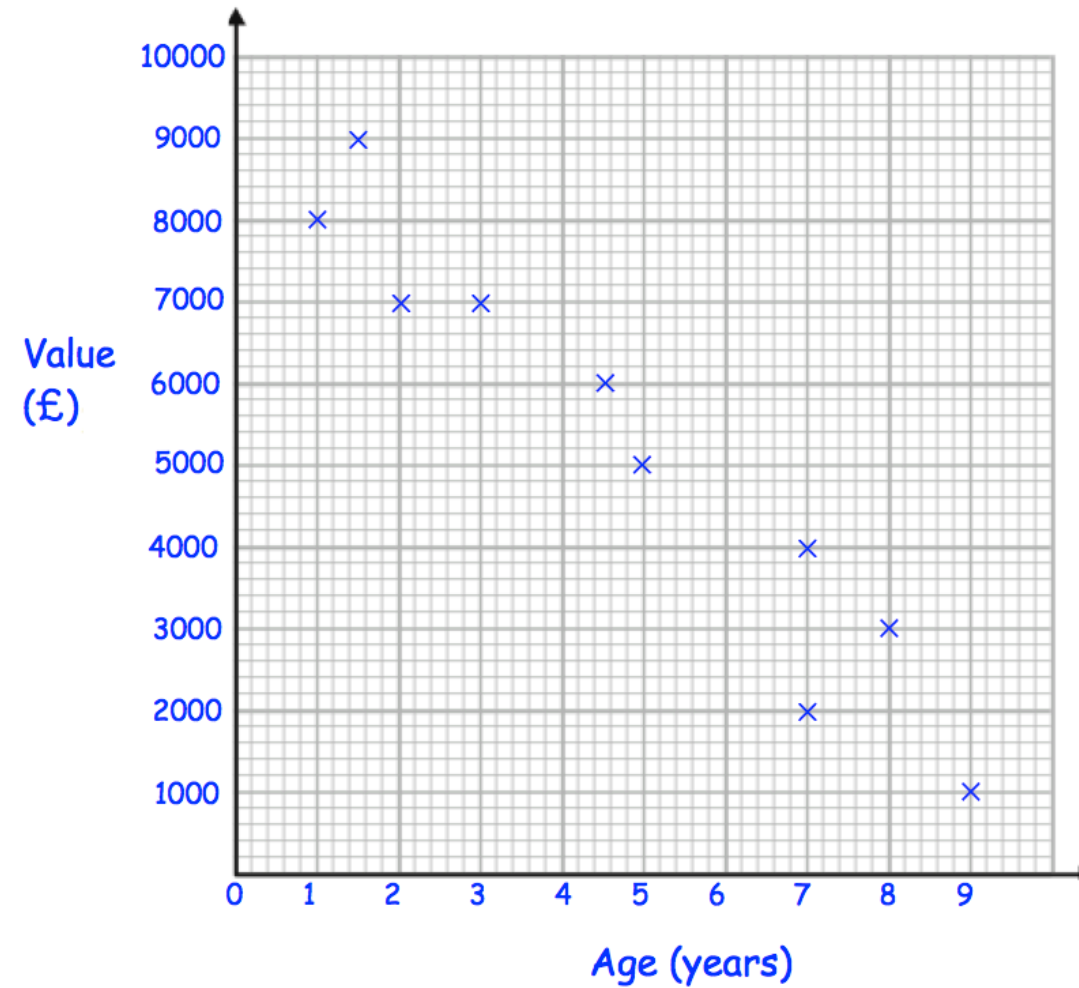


1. The value of cars in a used car garage are recorded below.
The scatter graph shows this information.



Another car arrives at the garage.
It is 4 years old and worth £5000.

- (a) Show this information on the scatter graph.

(1)

- (b) Describe the correlation between the value of the car and the age of the car.

.....

(1)

The next car that arrives is 6 years old.

- (c) Estimate the value of the car.

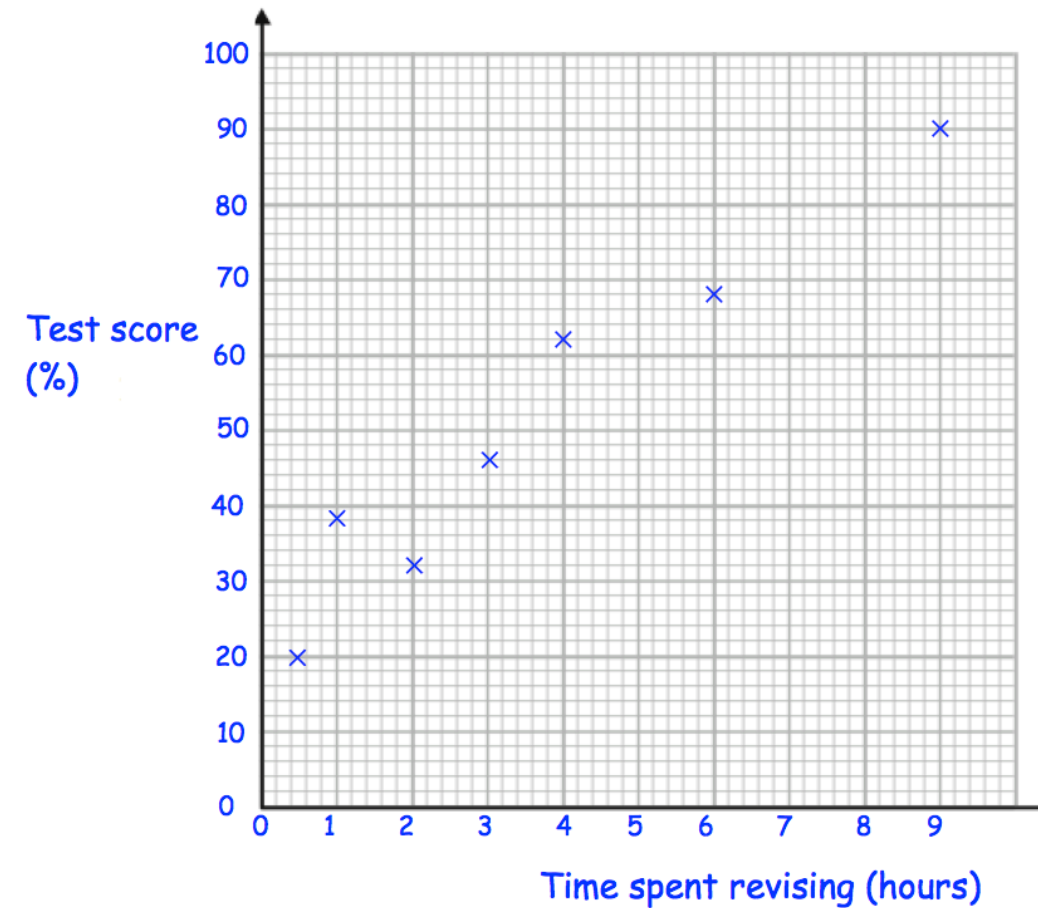
£.....

(2)

2. The table shows the time spent revising and the test scores of ten students.

| | | | | | | | | | | |
|-----------------------------|----|-----|----|----|----|----|----|----|----|----|
| Time spent revising (hours) | 9 | 0.5 | 1 | 4 | 6 | 2 | 3 | 7 | 5 | 8 |
| Test result (%) | 90 | 20 | 38 | 62 | 68 | 32 | 46 | 70 | 60 | 86 |

The first seven points have been plotted on this scatter diagram.



(a) Complete the scatter diagram.

(1)

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

.....

(1)

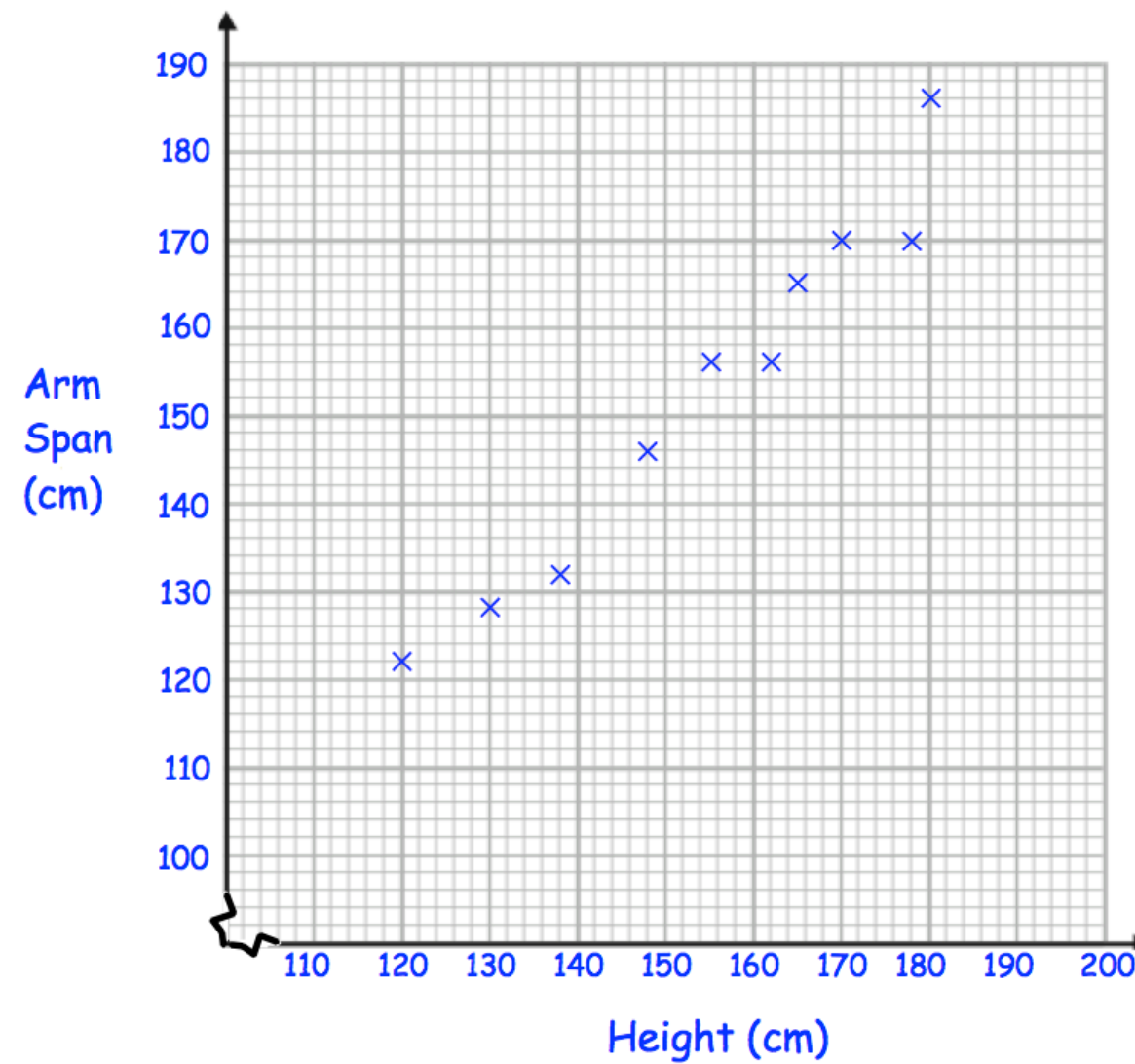
(c) Draw a line of best fit on your scatter diagram.

(1)

(d) Another student has spent 4.5 hours revising.
 Use your line of best fit to estimate their test result.

..... %
 (1)

3. The scatter graph shows information about the heights and arm spans of ten students in a school.



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

.....
(1)

Another student has a height of 150cm.

- (b) Estimate the arm span of this student.

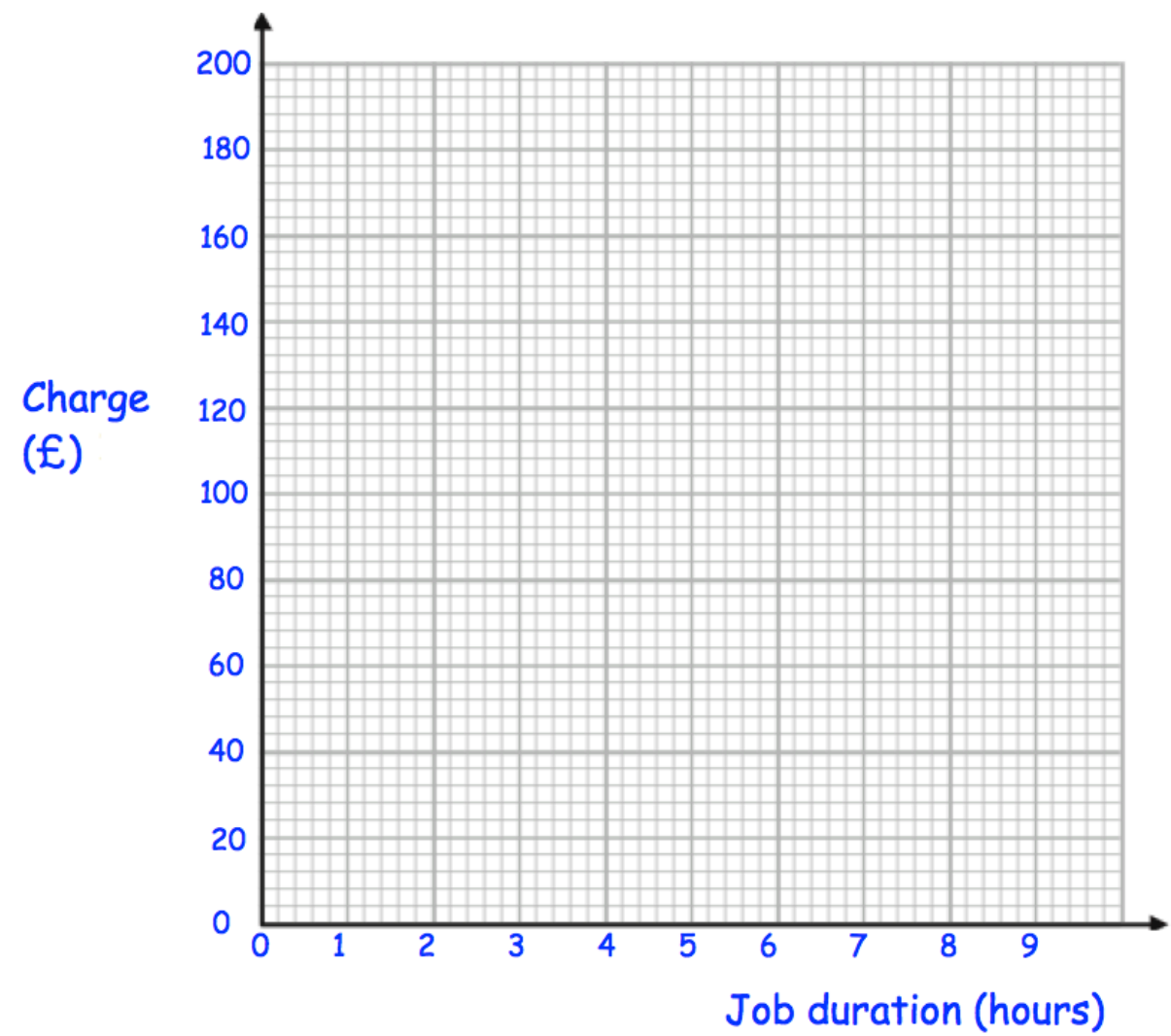
.....cm
(2)

4. The table shows the charge (£) by plumbers for jobs of different duration (hours).

| | | | | | | | |
|----------------------|----|----|-----|-----|-----|-----|-----|
| Job duration (hours) | 1 | 2 | 3 | 3 | 5 | 6 | 6 |
| Charge (£) | 60 | 80 | 104 | 116 | 128 | 140 | 160 |

(a) Plot the data on the scatter graph below.

(2)



(b) Describe the correlation.

.....

.....

(1)

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

(1)

(d) Use your line of best fit to estimate the charge for a 4 hour job.

£.....

(1)

(e) Explain why it may **not** be appropriate to use your line of best fit to estimate the charge for a job lasting 12 hours.

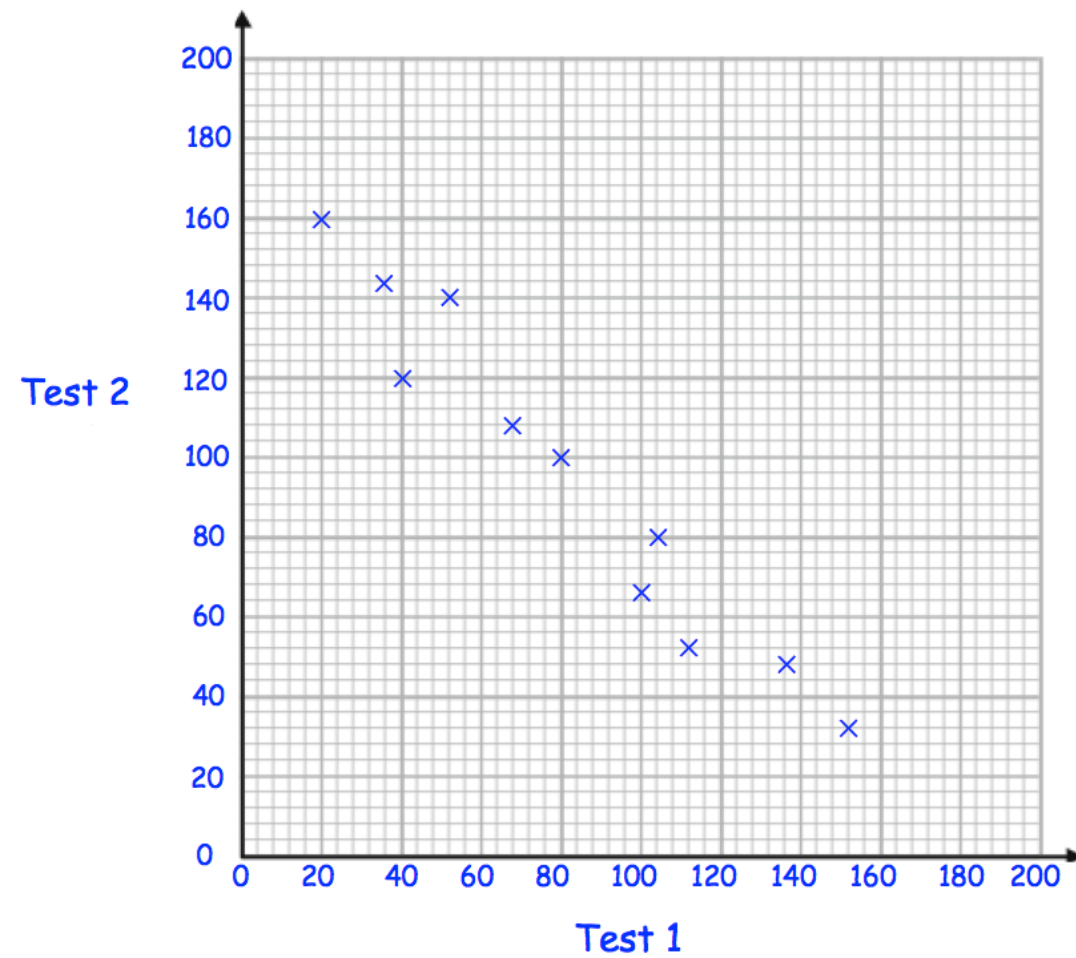
.....

.....

(1)

5. Some rugby players take two tests, one measuring speed and the other measuring strength. Each test is marked out of 200.

The scatter graph compares the results.



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

.....
(1)

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

(1)

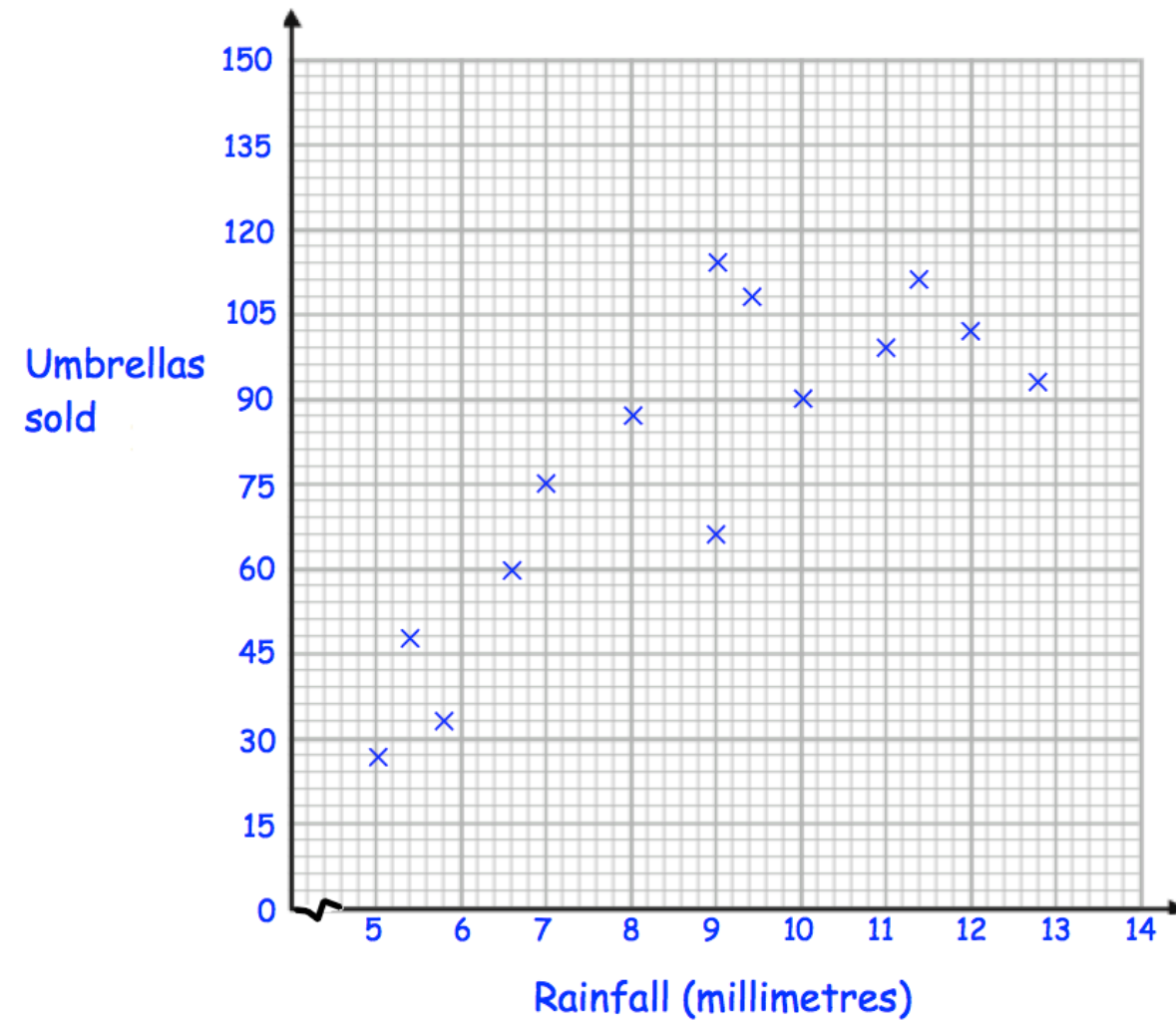
Brian scores 40 in Test 2.

- (c) Estimate his score in Test 1.

£.....
(1)

6. A shop sells umbrellas.

The scatter graph shows information about the number of umbrellas sold each week and the rainfall that week, in millimetres.



- (a) Describe the relationship between the rainfall and umbrellas sold.

.....
.....
(1)

- (b) What is the most number of umbrellas sold in one week?

.....
(1)

(c) What is the greatest amount of rainfall in one week?

.....
(1)

(d) In how many weeks did the shop sell over 105 umbrellas?

.....
(1)

In another week, there was 6mm of rain.

(e) Estimate the number of umbrellas sold.

.....
(2)

(f) Explain why it may **not** be appropriate to use your line of best fit to estimate the number of umbrellas sold in a week with 25mm of rainfall.

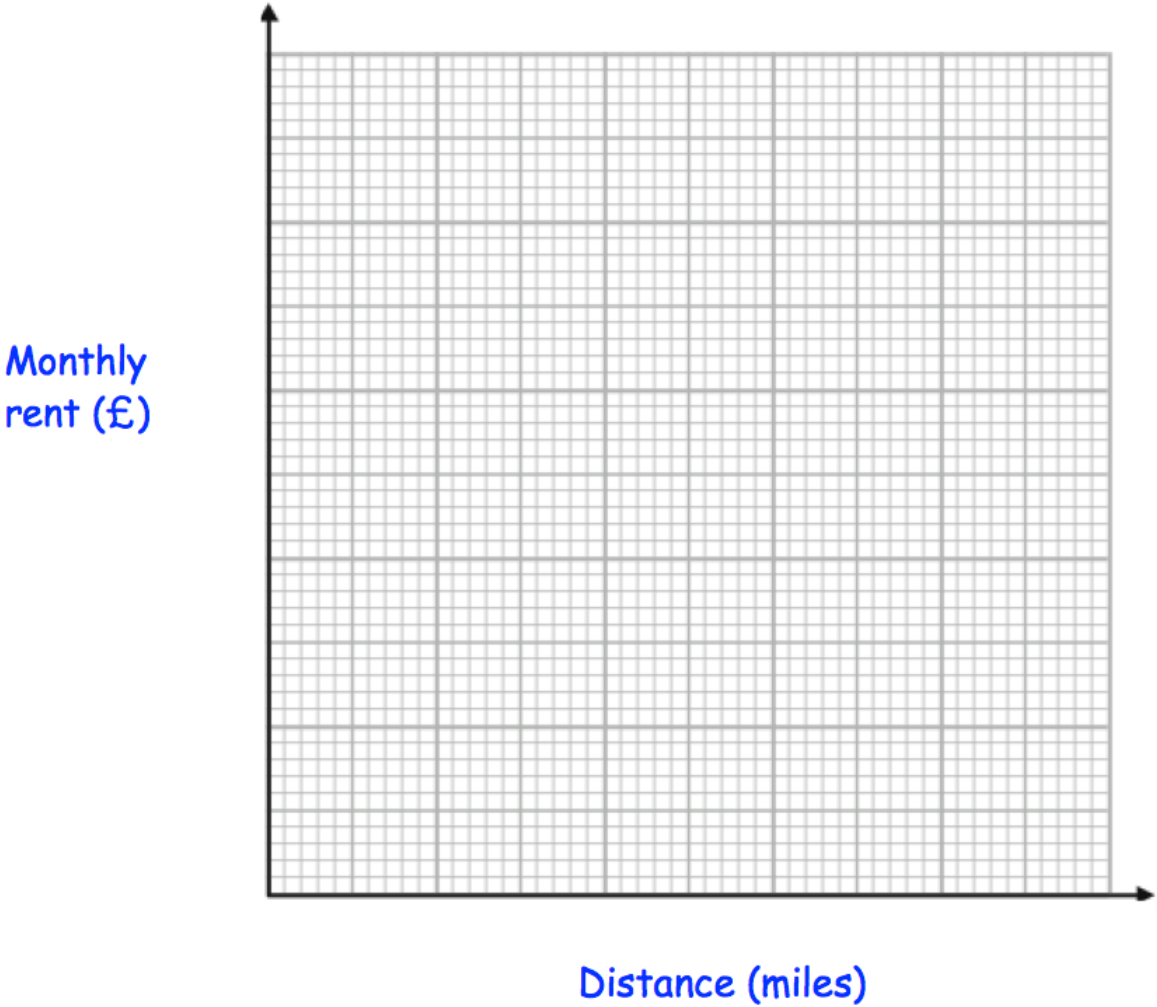
.....
.....
(1)

7. The table below shows information about the monthly rent of an apartment and the distance of the apartment from a city centre, in miles.

| | | | | | | | | | | |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Distance (miles) | 3.2 | 1.5 | 5.7 | 8.2 | 0.7 | 0.9 | 4.4 | 5.8 | 9.3 | 0.4 |
| Monthly rent (£) | 340 | 420 | 250 | 190 | 500 | 470 | 300 | 260 | 170 | 510 |

(a) Plot the data on the scatter graph below.
Clearly label your axes.

(3)



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

.....

.....

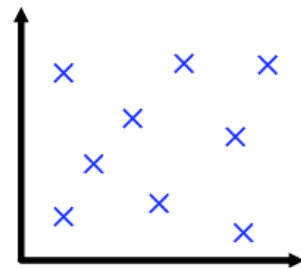
(1)

An apartment is 2.2 miles from the city centre.

(c) Find an estimate for the monthly rent

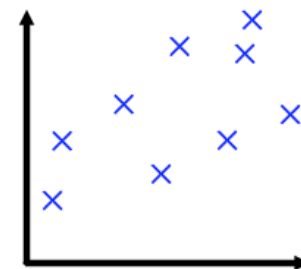
£.....
(2)

8. Match each scatter graph to the best description of the type and strength of correlation.



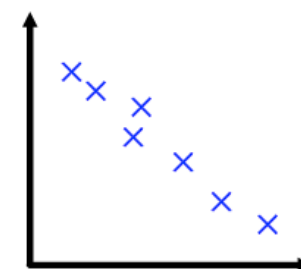
Strong positive correlation

Weak positive correlation



No correlation

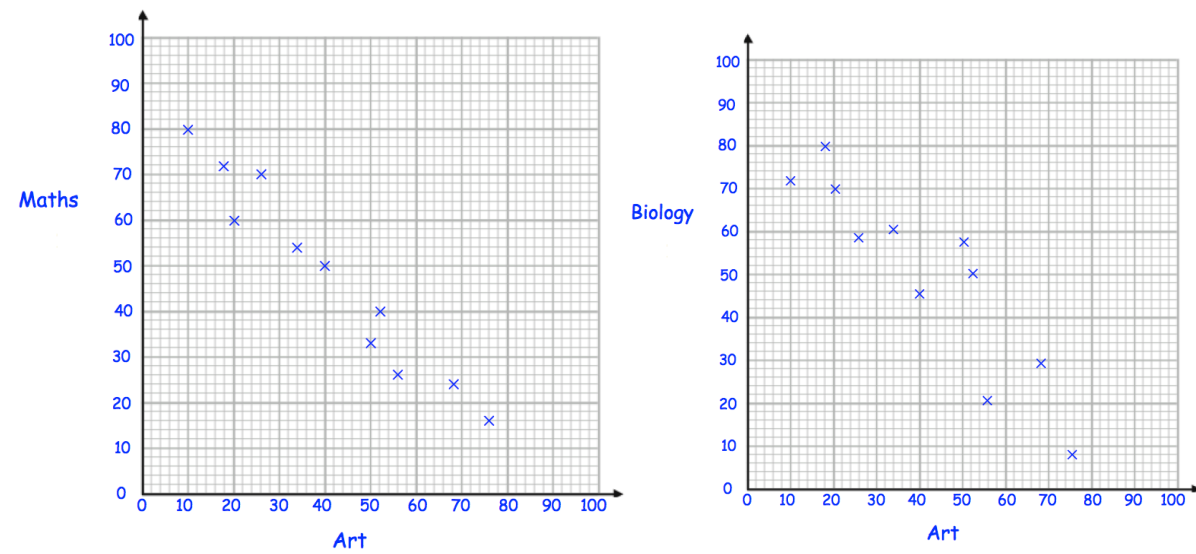
Weak negative correlation



Strong negative correlation

(2)

9. Eleven students sit examinations in Art, Maths and Biology.
Information about the results are shown in the scatter graphs below.



- (a) Describe the correlation between the maths scores and art scores.

.....
(1)

- (b) Describe the correlation between the biology scores and art scores.

.....
(1)

- (c) Describe the correlation between the biology scores and maths scores.

.....
(1)