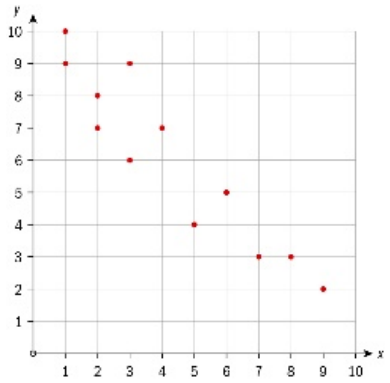
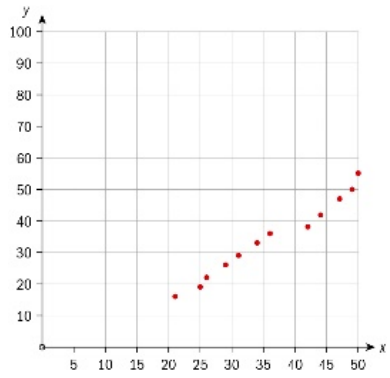
3.4 Bivariate data

1 For the following scatter graphs, describe the type of correlation and the strength of the correlation.

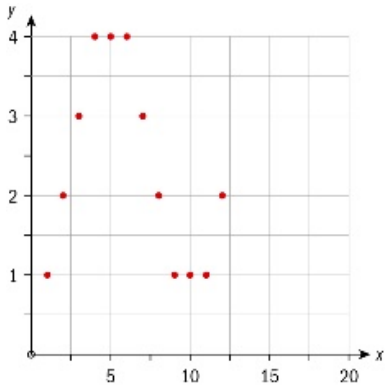
A



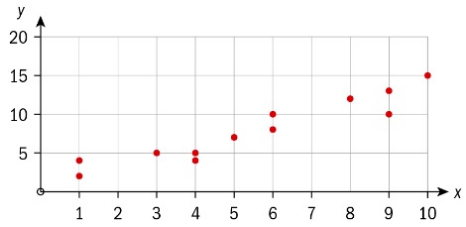
B



C



D



2 Margriet asked her 11 friends how many hours they had studied for the Latin test and how confident that they felt that they would do well, where 0 implied not well and 10 implied very well.

The following table shows the number of hours studied for a Latin test and the confidence level.

Number of hours	2	4	3.5	1	0.5	4	5	3.5	1.5	4	2.5
Confidence score	6	8	7	3	4	7	7	6	2	5	6

a Draw a scatter graph to represent this information.

b Describe the correlation between the two sets of data.

c State, with a reason, whether you think that one set of data "causes" the other set

3 Consider the following data sets and the correlations that were found:

A Temperature and number of hot drinks sold has a strong, positive correlation.

B Hours of practice and time taken to climb 100 steps has a strong, positive correlation.

C Number of eggs laid by chicken and the amount of food they receive has a moderate, negative correlation.

D Height of a person and the time taken to swim 50 metres has a moderate, positive correlation.

E The cost of a burger and the time taken to eat it has a strong, positive correlation.

F The stress level of a student and the performance level in a test has a moderate, negative correlation.

a In which sets do you think that one set has an influence on or "causes" the other set?

b Which example may have a moderate or strong correlation but one set does not "cause" the other set?

Answers

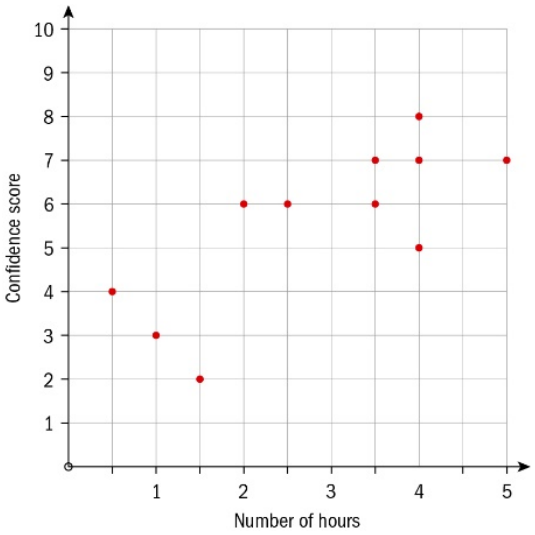
1 A moderate and negative

B strong and positive

C no correlation

D moderate and positive

2 a



b this is a weak, positive correlation.

c no, one set of data does not "cause" the other set.

3 a Perhaps A, B and F

b perhaps C, D and E