

Correlation and Regression – GCSE Statistics

1. No.2

Which of these values could **not** be a measure of correlation?

Circle your answer.

[1 mark]

-0.9

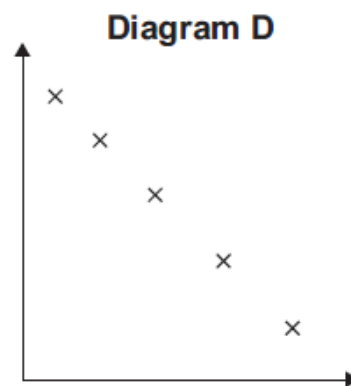
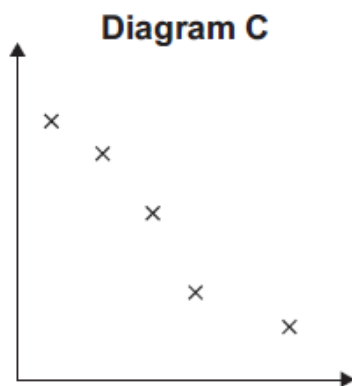
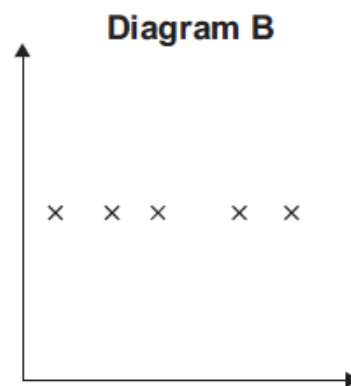
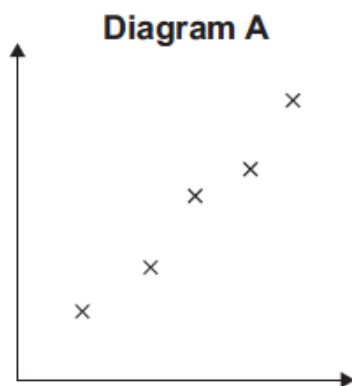
0

+0.5

+1.2

2. No.4

Here are four scatter diagrams.

Circle the letter of the scatter diagram for which the Pearson's product moment correlation coefficient is -1

[1 mark]

A

B

C

D

3. No.8

When customers have enjoyed a meal at a restaurant, they might

- tweet positively about it
- leave a star rating on a review website.

Dylan suggests that there is a positive correlation between the number of positive tweets and the average star rating.

- (a) Dylan collects secondary data for these variables for 10 restaurants in his town.

Where may he have been able to source the data?

[1 mark]

Answer _____

- (b) Here are the data he collected for tweets and star ratings last month.

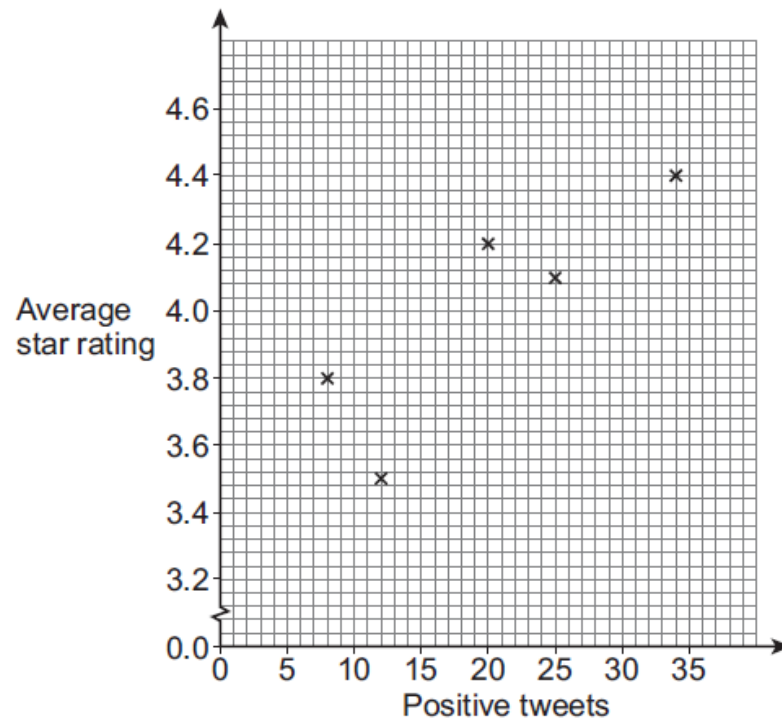
Positive tweets	Average star rating
25	4.1
8	3.8
20	4.2
12	3.5
34	4.4

Positive tweets	Average star rating
10	3.8
30	4.3
0	4.2
24	4.6
8	3.3

(b) (i) The data for the left-hand table is plotted on the scatter diagram below.

Complete the diagram by plotting the points for the right-hand table.

[2 marks]



(b) (ii) Circle the outlier on your scatter diagram.

[1 mark]

(b) (iii) Ignoring the outlier, the mean number of positive tweets for these restaurants is 19

Show that the mean star rating, ignoring the outlier, is exactly 4

[2 marks]

(b) (iv) Use these means to help you draw a line of best fit on the diagram.

[2 marks]

(b) (v) Estimate the average star rating for a restaurant with 15 positive tweets last month.

[1 mark]

Answer _____

(c) Dylan says,

“The data show a correlation of about 0.99 so my suggestion is correct.”

Make **two** comments on what Dylan has said.

[2 marks]

Comment 1 _____

Comment 2 _____
