

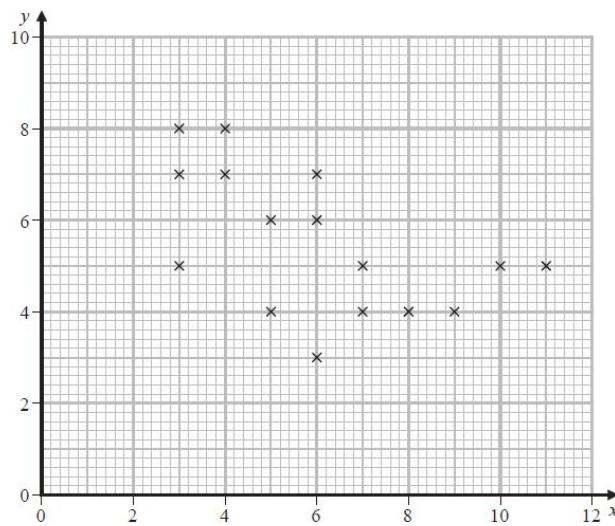
Daily Question – Applied Mathematics - Day 10

Topic : Correlation / Hypothesis Testing

Marc took a random sample of 16 students from a school and for each student recorded

- the number of letters, x , in their last name
- the number of letters, y , in their first name

His results are shown in the scatter diagram below.



(a) Describe the correlation between x and y .

(1)

Marc suggests that parents with long last names tend to give their children shorter first names.

(b) Using the scatter diagram comment on Marc's suggestion, giving a reason for your answer.

(1)

The results from Marc's random sample of 16 observations are given in the table below.

x	3	6	8	7	5	3	11	3	4	5	4	9	7	10	6	6
y	7	7	4	4	6	8	5	5	8	4	7	4	5	5	6	3

(c) Use your calculator to find the product moment correlation coefficient between x and y for these data.

(1)

(d) Test whether or not there is evidence of a negative correlation between the number of letters in the last name and the number of letters in the first name.

You should

- state your hypotheses clearly
- use a 5% level of significance

(3)

(Total for question = 6 marks)