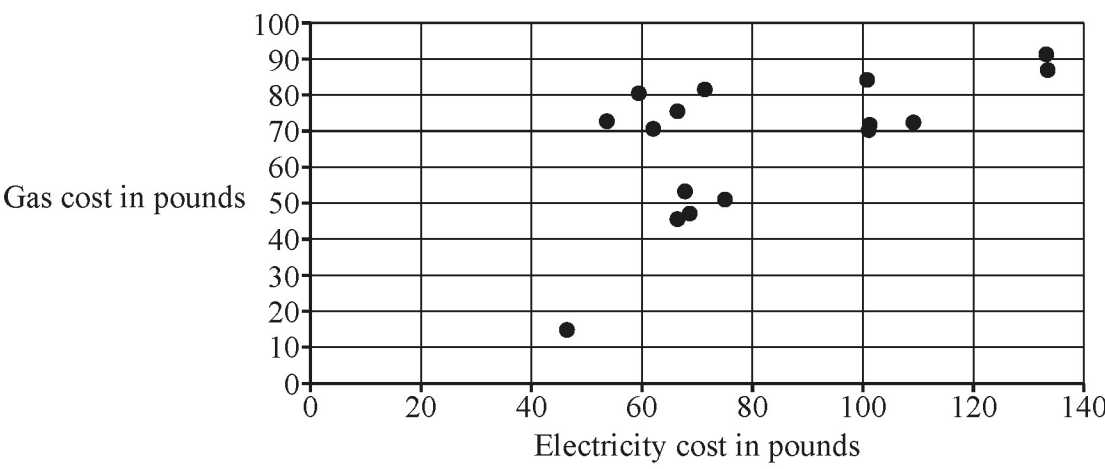


11 A householder is investigating whether there is any relationship between his monthly cost of gas and his monthly cost of electricity, both measured in pounds (£). The householder collects a random sample of monthly costs and presents them in the scatter diagram below.



One of the points on the diagram represents the energy costs in a month when the householder was away on holiday for three weeks. The other points represent the energy costs in months when the householder did not go away on holiday.

- (a) On the copy of the diagram in the **Printed Answer Booklet**, circle the point which represents the month when the householder was most likely to have been away on holiday for three weeks. [1]
- (b) With reference to the diagram, describe the relationship between the cost of gas and the cost of electricity. [1]

The householder decides to test whether there is evidence to suggest that there is any association between the monthly cost of gas and the monthly cost of electricity. The value of Spearman’s rank correlation coefficient for this sample is 0.4359 and the associated  $p$ -value is 0.09195.

- (c) Determine whether there is any evidence to suggest, at the 5% level, that there is any association between the monthly cost of gas and the monthly cost of electricity. [3]