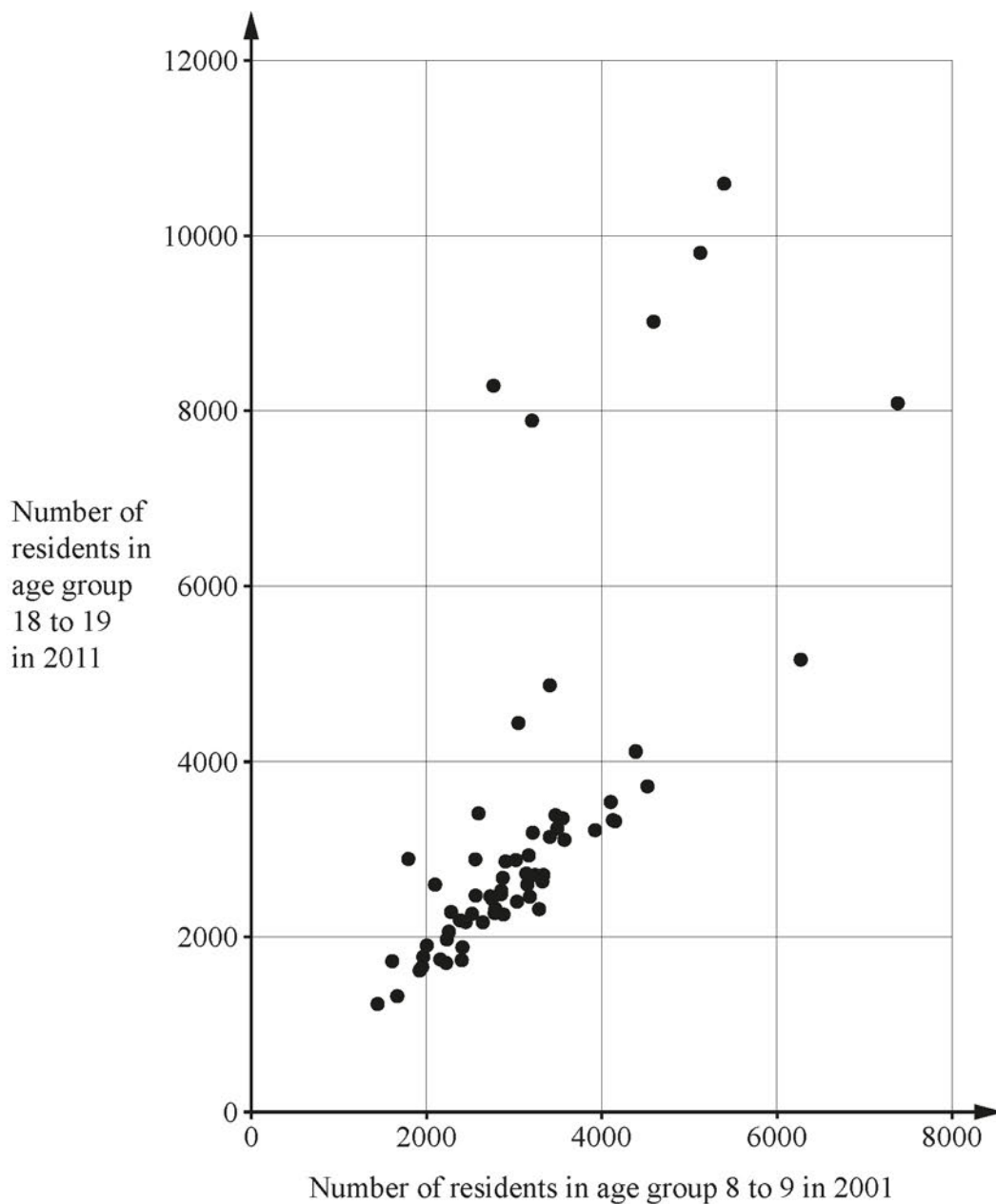


- 11** A student is investigating changes in the number of residents in Local Authorities in the South-East Region between 2001 and 2011. The scatter diagram shows the number x of residents in these Local Authorities in the age group 8 to 9 in 2001 and the number y of residents in the same Local Authorities in the age group 18 to 19 in 2011.



- (a)** Suggest a reason why the student is comparing these two age groups in 2001 and 2011. [1]

The student notices that most of the data points are close to the line $y = x$.

- (b) (i)** Explain what this suggests about the residents in these Local Authorities. [1]

- (ii)** The student says that correlation does not imply causation, so there is no causal link between the values of x and the values of y .

Explain whether or not they are correct.

[1]

- (c) Some of these Local Authorities contain universities.
- (i) On the diagram in the Printed Answer Booklet, circle three points that are likely to represent Local Authorities containing universities. [1]
- (ii) Give a reason for your choice of points in part (c)(i). [1]

Assume that the proportion of residents in age group 8 to 9 in 2001 was roughly the same in each Local Authority in the South-East. The Local Authority in this region with the largest population is Medway.

- (d) On the diagram in the Printed Answer Booklet, label clearly with the letter *M* the point that corresponds to Medway. [1]

11(c)(i)

11(d)

Number of
residents in
age group
18 to 19
in 2011

