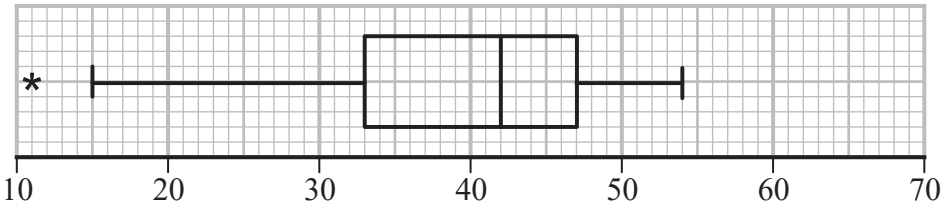
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2. Chi wanted to summarise the scores of the 39 competitors in a village quiz. He started to produce the following stem and leaf diagram

Score	
1	1 5 8 9
2	0 2 5 8 9
3	3 5 5 7 8 9 …

Key: 2|5 is a score of 25

He did not complete the stem and leaf diagram but instead produced the following box plot.



Score

Chi defined an outlier as a value that is

greater than $Q_3 + 1.5 \times (Q_3 - Q_1)$

or less than $Q_1 - 1.5 \times (Q_3 - Q_1)$

(a) Find

(i) the interquartile range

(ii) the range.

(2)

(b) Describe, giving a reason, the skewness of the distribution of scores.

(2)

Albert and Beth asked for their scores to be checked.

Albert's score was changed from 25 to 37
Beth's score was changed from 54 to 60

(c) On the grid on page 5, draw an updated box plot.
Show clearly any calculations that you used.

(7)

Some of the competitors complained that the questions were biased towards the younger generation. The product moment correlation coefficient between the age of the competitors and their score in the quiz is –0.187

(d) State, giving a reason, whether or not the complaint is supported by this statistic.

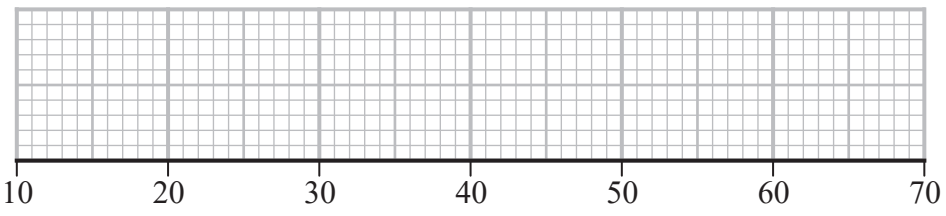
(2)

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Question 2 continued



Turn over for a spare grid if you need to redraw your box plot.

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Question 2 continued

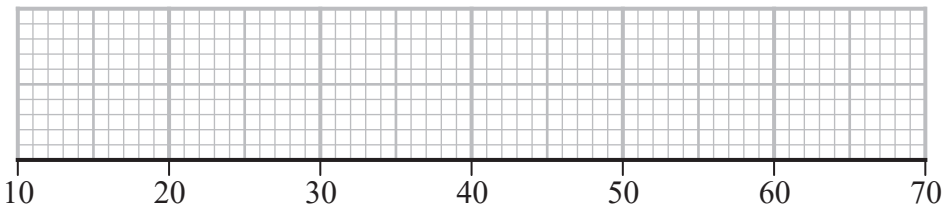
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Question 2 continued

Only use this grid if you need to redraw your box plot.



Q2

(Total 13 marks)