1 Local residents are concerned about the speed of cars travelling through their village. They record the speed, in km h^{-1}, of a random sample of 13 cars travelling through their village. The recorded speeds are as follows.

40 53 59 42 43 48 62 67 46 82 66 45 70

(a) Construct a 90% confidence interval for the population mean speed of cars passing through the village. [5]

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(b) State an assumption that is necessary for the confidence interval found in **1(a)** to be valid. [1]

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