3. Components are manufactured such that their length in mm is normally distributed with mean μ and variance σ^2. Below is a 95% confidence interval for μ calculated from a random sample of components.

(11.52, 13.75)

Using the same random sample,

(a) find a 90% confidence interval for μ.

(6)

Four 90% confidence intervals are found from independent random samples.

(b) Calculate the probability that only 3 of these 4 intervals will contain μ.

(2)

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Question 3 continued

(Total for Question 3 is 8 marks)

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