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6. The number of toasters sold by a shop each week may be modelled by a Poisson distribution with mean 4

A random sample of 35 weeks is taken and the mean number of toasters sold per week is found.

(a) Write down the approximate distribution for the mean number of toasters sold per week from a random sample of 35 weeks.

(2)

The number of kettles sold by the shop each week may be modelled by a Poisson distribution with mean λ

A random sample of 40 weeks is taken and the mean number of kettles sold per week is found. The width of the 99% confidence interval for λ is 2.6

(b) Find an estimate for λ

(4)

A second, independent random sample of 40 weeks is taken and a second 99% confidence interval for λ is found.

(c) Find the probability that only one of these two confidence intervals contains λ

(2)

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Question 6 continued

Q6

(Total 8 marks)