

102. Let X_1, X_2, \dots, X_n be independent random variables with densities

$$f_{X_i}(x|\theta) = \begin{cases} e^{i\theta-x} & x \geq i\theta \\ 0 & x < i\theta \end{cases}$$

Prove that $T = \min_i \{X_i/i\}$ is sufficient for θ .