

125. Let Y_1, \dots, Y_n be a random sample from a population with probability law

$$f(y \mid \theta) = \begin{cases} \lambda e^{-\lambda(y-\theta)}, & y > \theta \\ 0, & y \leq \theta \end{cases}$$

where $\lambda > 0, \theta \in \mathbb{R}$ and \mathbb{R} represents the set of all real numbers.

- (a) Find a minimal sufficient statistic for the parameter vector (λ, θ) .
- (b) Assume the value of λ is known. Prove the minimum order statistic $Y_{(1)} = \min_{i=1, \dots, n} \{Y_i\}$ is complete.