2. Let $Y_1, ..., Y_n$ 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 $Y_{(1)} = \min_{i=1,...,n}\{Y_i\}$ is complete.