41. Let $X_1, ..., X_n$ be IID from an exponential($\lambda$) distribution where $\lambda$ has the conjugate inverted gamma prior with parameters $\alpha$ and $\beta$. The prior is therefore

$$\pi(\lambda|\alpha,\beta) = \frac{1}{\Gamma(\alpha)\beta^\alpha}\left(\frac{1}{\lambda}\right)^{\alpha+1} e^{-1/(\beta\lambda)}, \quad 0 < \lambda < \infty.$$

Find a $1-\alpha$ credible set for $\lambda$.