1. Let $X_1, X_2, \ldots, X_n$ be independent identically distributed random variables with density function

$$h(t;\theta) = \begin{cases} 0, & \text{if } \; t \notin [1,3] \\ \theta 2^{-\theta}(t-1)^{\theta-1}, & \text{if } \; t \in [1,3] \end{cases}$$

Find a moment estimator for θ.