Stochastics Quiz #4

Max Likelihood Estimation

Name:

Let *X* be a Pareto random variable with parameters α and *xm*. Both α and *xm* are positive, and *xm*is the minimum possible value that *X* can take. The pdf of a Pareto random variable is as follows.

1. Find the max likelihood estimate of α, from a sequence of observations **X** = {X1, X2….XN}, assuming *xm* is known.
2. Argue that if *xm* is unknown, the max-likelihood estimate of this parameter is the minimum observed value of **X.**
3. How does this change your answer to part a?