

STA260 Alternative Solution (Tutorial 6 Question 3)

Monday, July 22, 2024 11:46 AM

OneNote can't connect to the server. Sync will resume once we connect. You don't need to take any action. (Error code: 0xE4010644 c12qc)



For ease let $U = Y^2$. Then clearly

$$U = Y^2 \sim \text{Exp}(\theta).$$

$$\text{Now, } W_n = \frac{1}{n} \sum_{i=1}^n Y_i^2 = \frac{1}{n} \sum_{i=1}^n U = \bar{U}$$

$$\mathbb{E}(U) = \theta \quad (\text{by formula sheet})$$

$$\text{Thus by WLLN, } W_n = \bar{U} \xrightarrow{P} \theta.$$

Thus it is a consistent estimator.