$$\frac{n}{\theta^n}\int_0^{\theta} t^n\,dt$$

$$= \frac{n}{n+1}\theta$$

$$E(T) = \frac{n}{n+1}\theta \neq \theta$$

T is not unbiased estimator of θ

$$\frac{1}{n^2}\left[V(X_1) + V(X_2)\right]$$

$$\frac{1}{n^2}\left[\sigma^2 + \sigma^2 + \dots + \sigma^2\right]$$

$$\frac{n\sigma^2}{n^2} = \frac{\sigma^2}{n}$$

$E(S_1^2)$

$$E\left[\frac{n-1}{n} \times \frac{1}{n-1}\sum (X_i - \bar{X})^2\right]$$

MLE of $\frac{\mu}{\sigma} = \frac{\bar{X}}{\sqrt{\frac{1}{n}\sum (X_i - \bar{X})^2}}$

Scanned with CamScanner

$p^2 = f\left(\frac{x}{n}\right)$

$E(x^2) = np - np^2 + n^2p^2$

$E(x) = p^2(n^2 - n)$

$p^2(n^2 - n) = E(x)^2 - E(x)$

$P(x \leq 4)$

$$\frac{x_0, x_2 \ldots x_n}{\bar{x} \sim N(n, \sigma^2)}$$

$\underline{P(Z \leq 0)} = 0.5$

0 1 2 3 4 5 6 7

[1 2 2] $\underline{3}$ [4 5 6 7]

len(L)