

**269.** The random variables  $X_1, X_2, \dots, X_n$  are independent and identically distributed with probability density function

$$f(x) = \frac{e^{-x/\theta}}{\theta}, \quad x \geq 0$$

Determine  $E[\bar{X}^2]$ .

(A)  $\left(\frac{n+1}{n}\right)\theta^2$

(B)  $\left(\frac{n+1}{n^2}\right)\theta^2$

(C)  $\frac{\theta^2}{n}$

(D)  $\frac{\theta^2}{\sqrt{n}}$

(E)  $\theta^2$