

**238.** The random variable  $X$  has the exponential distribution with mean  $\theta$ .

Calculate the mean-squared error of  $X^2$  as an estimator of  $\theta^2$ .

(A)  $20\theta^4$

(B)  $21\theta^4$

(C)  $22\theta^4$

(D)  $23\theta^4$

(E)  $24\theta^4$