

Question #14

Key: B

From the information, the asymptotic variance of $\hat{\theta}$ is $1/4n$. Then

$$\text{Var}(2\hat{\theta}) = 4\text{Var}(\hat{\theta}) = 4(1/4n) = 1/n.$$

Note that the delta method is not needed for this problem, although using it leads to the same answer.