

## Homework Solutions

### Chapter 8

#### Central Limit Theorem

According to the Central Limit Theorem, when the sample size is 100, we still have  $\mu_{\hat{p}} = p = 0.10$ , but now we have

$$\begin{aligned}\sigma_{\hat{p}} &= \sqrt{\frac{p(1-p)}{n}} \\ &= \sqrt{\frac{(0.10)(0.90)}{100}} \\ &= 0.03.\end{aligned}$$

Also, because the sample size is large,  $\hat{p}$  has a normal distribution.