Homework Solutions
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Exercise 9

Check that $(400)(0.50) = 200 > 5$, so $\hat{p}$ is normally distributed. The mean and standard deviation of $\hat{p}$ are

$$\mu_{\hat{p}} = 0.50$$

and

$$\sigma_{\hat{p}} = \sqrt{\frac{(0.50)(0.50)}{400}} = 0.025.$$

The probability that $\hat{p}$ is 45% or less is

$$\texttt{normalcdf(-E99,.45,.50,.025)} = 0.0228.$$