Untitled

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Bonus Question (optional): The CLT (for means) states that if we have a random sample $X_1, X_2, \cdots, X_n \overset{iid}{\sim} N(\mu, \sigma)$, then $\bar{X} = \frac{1}{n} \sum_{i=1}^{n} X_i \dot\sim N(\mu_{\bar{x}} = \mu, \sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}})$. Prove $E[\bar{X}] = \mu$ and $SD[\bar{X}] = \frac{\sigma}{\sqrt{n}}$. If you would like to do this by hand, you can upload a picture in addition to the .Rmd and .pdf/.doc.