MTH 245, Quiz #7, Spring 2022   Name _____

Instructions: Show all work (that work can be in the form of a spreadsheet submitted along with the quiz or done by hand on paper; if you use your calculator, say what functions you used). Report answers to the standard number of decimal places, or to the number requested in the problem. Be sure to answer all parts of the questions, including requests for interpretation and explanations. Be as thorough as possible.

1. Define a sampling distribution.

2. The standard error for the sampling distribution of means is given by $\sigma_\mu = \frac{\sigma}{\sqrt{n}}$. If the population mean is 100 and with a standard deviation of 15. What is the standard error for a sample size of 20?

3. The standard error for the sampling distribution of a proportion is given by $\sigma_p = \sqrt{\frac{p(1-p)}{n}}$. If the proportion $p = \frac{7}{12}$, what is the standard error for a sampling distribution with a sample size of 250?