Instructions: You must show all work to receive full credit for the problems below. You may use Excel where appropriate. Any datasets needed will be posted on Canvas with the quiz file, and you should submit such work along with your quiz. Round answers to two decimal places unless other instructions are given in the problem.

1. A sample of 50 people is taken, and the mean is determined to be 30.2, with a standard deviation of 7.6. If the standard error is $SE = \frac{SD}{\sqrt{n}}$, find the standard error.

2. The standard score is $Z = \frac{X-\mu}{\sigma}$. Two friends are comparing their exam results in the same course on exams given by different instructors. Rashida's class has a mean of 203 points with a standard deviation of 23 points. Jeremiah's class has a mean of 73 with a standard deviation of 12. Rashida got a 221, and Jeremiah got an 84. Which student did better on the exam?

3. A sample of 1120 is taken and the proportion of those who have heard of the test product is 32%. The formula for the standard error of proportions is $SE = \sqrt{\frac{p(1-p)}{n}}$. What is the standard error for this sample?

4. Use the data in the Excel file **154quiz10data.xlsx** on Sheet 1 and find the standard deviation and sample size. If the standard error is $SE = \frac{SD}{\sqrt{n}}$, find the standard error.

5. The standard score is $Z = \frac{X-\mu}{\sigma}$. The data on Sheet 2 shows percent of the population living in homes that they own for Alaska and Pennsylvania. Calculate the mean and standard deviation for each state. Using the values from 2014, which states was historically doing better on homeownership in that year?

6. On Sheet 3 are the genders of customers of a particular store. Find the proportion of male customers. The formula for the standard error of proportions is $SE = \sqrt{\frac{p(1-p)}{n}}$. What is the standard error for this sample?