MTH 245, Quiz #10, 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. A sample of 249 American cars were tested and found to have a mean gas mileage of 20.1 mpg with a sample standard deviation of 6.41 mpg. A sample of 79 Japanese cars were sampled and found to have a sample mean of 30.01 mpg with a sample standard deviation of 6.11 mpg. Is this sufficient evidence to conclude that the gas mileage of Japanese cars is higher than the gas mileage for American cars?

2. In a study of patients on sodium-restricted diets, 55 patients with hypertension were studied. Among these, 24 were on sodium-restricted diets. Of 149 patients without hypertension, 36 were on sodium-restricted diets. We would like to know if we can conclude that, in the sampled population, the proportion of patients on sodium-restricted diets is higher among patients with hypertension than among patients without hypertension.

3. Use the data in the data file 245quiz10data.xlsx to conduct an ANOVA test. Set up your hypothesis and determine whether there is sufficient reason to think that there are regional differences in the amount of money spent.