RIT

STAT 614 Applied Statistics

Fall 2021

Homework #1

Numerical and Graphical Summaries

1. An important characteristic in a chemical process is viscosity. The viscosity measurements for the last 100 batches are recorded in a file called viscosity.txt. Use this data to answer the following questions.

   a. Provide a graphical summary of viscosity and comment on the shape of the distribution.

   b. Provide a numerical summary of viscosity. Which measures of center and spread would you use and why?

   c. Is this process stable over time? Explain. Provide a plot that helps explain your answer.

2. Researchers studying consumer preferences collected data from a survey. The respondents replied with their relationship status and frequency of teeth cleaning. The data is in toothpaste.txt.

   a. Provide a graphical summary of the frequency of teeth cleaning variable, include some comments on what you see.

   b. For both variables, provide a table with the counts of each category and a table with the percentages of each category.

   c. Do you think there is a relationship between relationship status and how frequently someone gets their teeth cleaned?

3. In brainsize.txt, there are IQ scores and MRI data for 38 subjects. Is there a linear relationship between brain size (MRI count) and IQ scores (FSIQ)? Provide a plot that helps you answer this question.