

MIE304H1: Introduction to Quality Control
Practice Problems - Review of Statistical Inference
(Winter 2021)

Answer the following questions about dataset '03 data' using Python.

The following questions are about 'Net Contents (Oz)' column.

1. Does the data support a population mean of 12? (Yes/No) What is the p-value?
2. If $\mu = 12.00$, what is the probability that we fail to reject $\mu = 12.012$, given that the values are the average volume of a sample of 100 items analyzed?

The following questions are about the rest of the columns.

3. Is there a change in the mean before and after the 13th day? (Yes/No) What is the p-value?
4. Suppose that after the 13th observation, μ shifts to 80. What is the probability that we continue to believe the mean is the same as the mean for the first 13 days (assume that the standard deviation is equal to 21.4 and sample size is equal to 100)?