



MATH225

Week 7 Lab Assignment

Name: _____ Instructor Name: _____

Please use this template to help answer the questions listed in the lab instructions. The “steps” below refer to the steps listed in the lab instructions. Type your answers and post your screenshots in the spaces given.

Summary of Articles

Write a few complete sentences summarizing what you learned from the articles provided.

A. Summary of Article #1

The first article, "Confidence Intervals: Part 1," introduces confidence intervals as a method for estimating values in a whole group by studying a small sample. A confidence interval gives a range where the true average or proportion for the whole group is likely to be. For example, a 95% confidence interval means that if the process were repeated many times, 95% of the results would include the true value. The article notes that a narrower range yields a more accurate estimate. A wider range indicates greater uncertainty and may require additional data.

B. Summary of Article #2

The second article, Confidence Intervals: Part 2, explains how to use these ranges to compare two groups. If the ranges for two group averages overlap, the difference is not considered important. If they do not overlap, the difference is considered important. The article also notes that researchers may examine the range of the difference directly. If this range does not include zero, the difference matters. For example, comparing the average blood pressure between active and inactive patients reveals how overlapping or non-overlapping ranges can alter the conclusion.

- C. How do you think confidence intervals can be used in health sciences? Use the articles to inspire and support your answer.
- In the health sciences, confidence intervals are important because they indicate the level of certainty we can have about study results. For example, when testing a new treatment, the confidence interval around the improvement shows whether the effect is likely real or just due to random chance. These ranges also aid in comparing groups, such as patient outcomes between treatment and control groups. If the ranges do not overlap, it makes a stronger case for a real difference. Confidence intervals enable healthcare researchers and professionals to make more informed decisions. They help avoid giving too much weight to unclear results.

Data Collection

Use the data set you collected for the Week 5 lab (heights of 10 different people plus the 10 heights provided by your instructor). (**NOTE:** This is NOT the data used in the lab video, which is about midterm grades. Do not use the midterm grades data.)

Instructor Provided	65	65	66	67	69	69	72	72	73	74
My own	71	36	65	64	71	62	65	65	71	39

For the remainder of this lab, treat the 20 numbers as ONE sample.

Provide a screenshot of your Week 5 Data (20 Heights) from the Week 6 Spreadsheet **Sample Mean and Standard Deviation** tab (be sure that your mean, standard deviation, and all 20 data values from the spreadsheet are visible).