**MA 155 Projects**

**First Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Last Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Project 3:** Inferential Statistics

**Due Date:** xx/xx/xx @ xx p.m. on Canvas

**Instructions**:

* You **must** watch this video: <https://www.youtube.com/watch?v=aKAXduMRifY> first before starting the project.
* You **must** use MS Excel to complete the project.
* You **must** round all your answers to two decimal places.
* You **must** use this word file/ document to complete and submit the project on canvas by the due date.

1. **(x points)** Use your Project 1 data set that has a **sample size of 25** to create a new variable called body mass index (BMI). Name the new variable **BMI-25**. **BMI is weight divided by the square of height multiplied by 10,000 (round your BMI values to one decimal place)**. The formula for obtaining BMI is given as follows:

Based on the 25 BMI observations, compute the following:

1. **(x points)** What is the sample mean (point estimate)?
2. **(x points)** What is the margin of error for a 95% confidence interval?
3. **(x points)** What is the 95% confidence interval for the true population mean?
4. **(x points)** Interpret the interval in part 1.c).
5. **(x points)** Use your Project 1 data set that has a **sample size of 50** to create a new variable called body mass index (BMI). Name the new variable **BMI-50**. **BMI is weight divided by the square of the height multiplied by 10,000 (round your BMI values to one decimal place)**. The formula for obtaining BMI is given as follows:

Based on the 50 BMI observations compute the following:

1. **(x points)** What is the sample mean (point estimate)?
2. **(x points)** What is the margin of error for a 95% confidence interval?
3. **(x points)** What is the 95% confidence interval for the true population mean?
4. **(x points)** Interpret the interval in part 2.c).
5. **(x Points)** Comment briefly (not more than two sentences) about the impact of sample size (i.e., when the sample size was increased from 25 to 50) on the width of the confidence interval.

**Appendix**

Graphical user interface, application, table, Excel

Description automatically generated

* This is how to enter formula in excel to calculate and create the variable **BMI-25**.
* Make sure to round the values to one decimal place using “Decrease Decimal” in excel

Graphical user interface, application, table, Excel

Description automatically generated

* This is how to enter formula in excel to calculate and create the variable **BMI-50**.
* Make sure to round the values to one decimal place using “Decrease Decimal” in excel