

# Homework 4

## SOCI 303: Statistics for the Social Sciences (Spring 2017)

10 points

Due: May 12, 2017

### Overview:

In this assignment, you'll be completing problems using R. These problems cover topics from Chapters 9 and 12 in your textbook. **Remember to append/copy and paste your R script as the final page of this assignment** (as a new page).

### Problem 1

- What do both t-tests and ANOVA test (e.g. what is similar about t-test and ANOVA)?

### Problem 2 (*T-test*)

- Using the `surveys` data set in R (from the `MASS` package), report the **means** for the (`Height`) variable, broken out by the (`Sex`) grouping variable.
- Using the `surveys` data set in R (from the `MASS` package), report the **standard deviations** for the (`Height`) variable, broken out by the (`Sex`) grouping variable.
- Fully/correctly report and interpret the T-test.
- Based on the means reported above, which group (`Sex`) is taller in `Height`?

### Problem 3 (*Analysis of Variance*)

- Using the `surveys` data set in R (from the `MASS` package), report the **means** for the (`Pulse`) variable, broken out by their level of exercise (`Exer`), the grouping variable.
- Using the `surveys` data set in R (from the `MASS` package), report the **standard deviations** for the (`Pulse`) variable, broken out by their level of exercise (`Exer`), the grouping variable.
- Fully/correctly report and interpret the ANOVA.
- Based on the means reported above, which group(s) (`Exer`) has/have a higher in `Pulse`?

### Problem 4

- When should we use a T-test and when should we use an ANOVA?