

Homework 11

Due Wednesday, November 18

WMMY: Ch 10 # 1, 3, 19, 21, 25*, 29, 55*, 57*, 59*
* Clearly state your hypothesis test for these.

For each study below, do the following:

- i. Name and describe the parameters involved.
- ii. State a hypothesis test for the study, and argue why you chose a one or two tailed test.
- iii. Write a sentence summarizing the study if it results in a P value of 0.02.
- iv. What are the implications of a Type I error, and of a Type II error in this setting?

Study A: Measurement calibration: To check a new analytical method, a chemist obtains a reference specimen of known concentration 0.9 mol/liter trichloric acid from the National Institute of Standards and Technology. She then makes 20 measurements of the concentration of this specimen with the new method and checks for bias by comparing the mean result with the known concentration.

Study B: Does saccharin cause cancer? A study took two groups of 100 mice each, fed the control group the standard lab diet, and fed the treatment group a diet high in saccharin. The incidence of cancer was recorded for both groups.

Study C: Physical training for firefighters: A study of US fire departments compared scores on a physical abilities test for women who received no training with women who received a 4 week physical training program.