

Homework 1
Assignment 1B

Total Points -10
Due Date – October 16th

1. [2 points]
For the patients in the weight loss program the point estimate for the average difference in weight between men and women is after two months in the program is:

$$\overline{x}_{men} - \overline{x}_{women} = 24.45 \text{ minutes}$$

The standard error is 5 minutes.

Construct the 99% confidence interval.

2. [4 points]
A. For the given Breast Cancer Data compute the confidence Interval for the given features using the statistical tool R:
radius_mean, texture_mean, perimeter_mean and area_mean. Do the analysis separately for Malignant (M) and Benign (B).

Hint: Rmisc package

Formula to be used:

$$CI(data[feature], ci = \alpha)$$

Use $\alpha = 0.95$

Attempt: Plot the data and the confidence interval (No bonus points- this part is for learning only)

- B. [4 points]
Compute the Pearson correlation coefficient using the statistical tool R for the above features and infer the result with respect to Malignant (M) and Benign (B) separately and also together.