

BIOS 662, Fall 2018

Homework 3

Assigned: Tuesday, September 18

Due: Tuesday, September 25

1. This is a continuation of problem #2 from Homework 2 involving the dataset “HW2_PGE.txt”. Use the data for all patients combined without regard to hypercalcemia status.
 - (a) Use a plot to decide whether the distribution of serum calcium is approximately normal.
 - (b) Calculate the sample mean and standard deviation for serum calcium, and construct a 95% confidence interval for the population mean serum calcium of such patients.
 - (c) Suppose that the sample size is doubled (but yielding the same mean and standard deviation). Determine the percentage change in the width of the 95% confidence interval. Repeat assuming a sample three times the original size.
 - (d) Use the bootstrap method to obtain a 95% confidence interval for the population mean serum calcium of such patients.
 - (e) Calculate the sample median and obtain an exact 95% confidence interval for the population median serum calcium of such patients.
2. Problem 4.20 on page 111 of the textbook.