

Stat 518 - Homework 5

Due: Monday, October 30th

1) For the data in problem 4 on page 365, test the appropriate hypothesis using each of the paired t-test, sign test, and signed rank test, by SAS or S-Plus (your choice). Also, perform the signed rank test by hand.

2) Construct the appropriate t and Hodges-Lehmann confidence intervals for the data in problem 7 on page 366, both by hand and by S-Plus.

3) Perform a simulation study to estimate the actual type I error rate for the signed rank test and the paired t-test in a case where the distribution is not normal.

Let X_i and Y_i both be Uniform[0,1]

Use $H_0: E(D_i)=0$, $H_A: E(D_i)>0$, $\alpha=0.10$, $n=20$, and 400 simulation runs.

4) Page 297, problem 1 using both the one-way ANOVA and Kruskal-Wallis test by hand or S-Plus or SAS (choose one). Do the assumptions of the tests appear to be met?