

STAT 672, Spring 2011
Homework 5
due Thurs. March 3

Show all work.

The numbers refers to *Hollander and Wolfe*, if not specified otherwise. Some problems may have additional parts.

1. p. 123, 4.1

Use the R function `wilcox.exact` to calculate the value of W . Calculate a W^* and compare the p-value from the normal approximation to the exact p-value from `wilcox.exact`.

The data is available off the class web page at:

<http://www.rohan.sdsu.edu/~babailey/stat672/t4-3.txt>

2. p. 131, 4.15

Use the sample code from Charlie Geyer's computer example for The Wilcoxon Rank Sum Test to construct the Hodges-Lehman estimator (median of the pairwise differences). Also, using the computer example, compute a 95% CI using the confidence interval associated with the sign test and sign rank test. What is the achieved significance level of your CI? How does this interval compare to the interval obtained using the R function `wilcox.exact`?

Professor Geyer's code for Example 4.3 and 4.4 (in text) is available here:

<http://www.stat.umn.edu/geyer/5601/examp/ranksum.html>

You may also use the code for Problem 4.8 (with ties) off the course calendar.

3. p. 139, 4.37

You will have to calculate \hat{U} by hand (or help from R), and use the back of the Book Table A.7. Be sure to state your hypotheses.