Math 159 Nonparametric Analysis Spring 2010 Jo Hardin HW5: Section 5.1 Solutions

Beware of typos. Also, please let me know if you do find any mistakes!

5.1.2

$$H_0: F(X) = G(X)$$
  

$$H_1: E(X) < E(Y)$$
  

$$T = \sum_{i=1}^8 R(X_i) = 2 + 8 + 6 + 1 + 3 + 6 + 4 + 6 = 36$$

(X = temp in Spokane, Y = temp in Des Moines) Using the WRS table (A7), we see the p-value is between 0.001 and 0.005. We can reject  $H_0$ . The mean high temp in Des Moines is higher than the mean high temp in Spokane during the summer.

- 5.1.3 I'm not going to give you solutions to the CI interval problems, because I'll probably ask them on the next HW. No CI from chapter 5.1 on exam 1.
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- 5.1.6 (a)

$$\begin{aligned} H_0: & F(X) = G(X) \\ H_1: & E(X) > E(Y) \\ T & = \sum_{i=1}^{1} 0R(X_i) = 13 + 2 + 4.5 + 9.5 + 7.5 + 3 + 1 + 6 + 11 + 7.5 = 65 \end{aligned}$$

(X = Plain tent, Y = Pattern tent) Using the WRS table (A7), the p-value is less than 0.001. We can reject the null hypothesis and claim that patterned tents are harder to detect (as measured by the distance at which the tent is detected in the wooded area).

(b) I'm not going to give you solutions to the CI interval problems, because I'll probably ask them on the next HW. No CI from chapter 5.1 on exam 1.