Stat 8680: Applied Nonparametric Methods

Assignment 2

1. **Problems 3.14 and 4.3.**

The first application listed in section 3.7 involved British insurance claims. The 2005 median was 1579. A random sample of 14 claims from a large batch received in the first quarter of 2006 were for the following amounts (in L):

1175,1183,1327,1581,1592,1624,1777,1924,2483,2642,2713,3419,5450,7615

Are the insurance claim data likely to have come from a normal distribution? Test using Lilliefors' test.

2. **Problem 4.2.** (page 122)

3. **Problem 4.7.** (page 123)

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*4.2 The negative exponential distribution with mean 20 has the cumulative distribution function $F(x) = 1 - e^{-x/20}, 0 \leq x < \infty$. Use a Kolmogorov test to determine if it is reasonable to assume the excess parking times in Exercise 3.17 are a sample from this distribution.

*4.7 In a pilot opinion poll 18 voters from one electorate selected at random were asked if they thought the British Prime Minister was doing a good job. Six (one-third) said *Yes* and twelve (two-thirds) said *No*. Is this sufficient evidence to reject the hypothesis that 50 percent of the electorate think the Prime Minister is doing a good job?

The pilot results were checked by taking a larger sample of 225 voters. By coincidence 75 (one-third) answered *Yes* and 150 (two-thirds) answered *No*. Do we draw the same conclusion about the hypothesis that 50 percent of the electorate think the Prime Minister is doing a good job? If not, why not?