36 - 226 Introduction to Statistical Inference

Homework assignment 14

Due: ***Friday***, May 3, 2013

- Write your full name, the course number, and the homework number at the top of each page.
- **STAPLE** your entire assignment together with a staple.
- Write clearly. Electronic submission of homework assignments is not accepted.

1. Wackerly 13.1. For part (c), find the exact p-value using your preferred environment (e.g. R, MATLAB, etc.)

2. (a) Show that $\sum_{i=1}^{n}(X_i - \bar{X})(Y_i - \bar{Y}) = \sum_{i=1}^{n}(X_i - \bar{X})Y_i$. Use this to show that the Least-squares estimator for β_1 can be written in the form $\hat{\beta}_1 = \sum_{i=1}^{n} w_i Y_i$ where $w_i = \frac{(x_i - \bar{x})}{\sum_{i=1}^{n}(x_i - \bar{x})^2}$.
   (b) Wackerly 11.15a.

3. Wackerly 13.6. For part (c), you can use the results of Exercise 13.5 - you do *not* need to do Exercise 13.5.

4. Wackerly 13.9. For part (b), find the exact p-value using your preferred environment (e.g. R, MATLAB, etc.)

5. Wackerly 14.3.

6. Wackerly 14.14.

7. Wackerly 14.22.