Homework 5: Due Wednesday, March 10

HW5 is "Case Study 2" accessed via

http://rls.sites.oasis.unc.edu/CaseStudy2.html

However I need to make some clarifications and corrections:

- There's both an error and a clarification needed regarding Question 5. The formula $\beta_1 = r\frac{SX}{SY}$ is wrong: it should be $\widehat{\beta}_1 = r\frac{SY}{SX}$ (I added the hat, to be consistent with notation earlier in the course).

- However I also need to define notation. Here, $SX = \sqrt{\frac{SSX}{n-1}}$, $SY = \sqrt{\frac{SSY}{n-1}}$ (the standard deviations of the X and Y variables) while $r = \frac{SXY}{\sqrt{SSX \cdot SSY}}$ (the sample correlation coefficient; see Section 3.9 of course text). You should check that these expressions give the same formulas for $\widehat{\beta}_1$ and $\widehat{\beta}_0$ as we have had in class, and then write the R functions as stated in the question.

- With Question 5 corrected as such, Question 6 should also make sense.

- Please review the section headed `lm() and diagnostics` but I'm not requiring that you answer that as part of the homework assignment.

- Credit will be given for each of questions 1–11 for a total of 40 points, same as Project 1.