Stat 410 HW 2 8-30-2005 D. Scott Due 9-8-05 (Thursday)

1. Write a *function* that produces a 2×2 matrix of figures. The input should be two vectors x and y containing data $\{(x_i, y_i), i = 1, \ldots, n\}$. Your function should accept (optionally) labeling information. The 4 graphs should display

i. Scatter diagram of the data with the regression line.
ii. Same as the first diagram but add dotted lines giving the 95% confidence interval for the regression line, and also the 95% confidence interval for a "new" observation.
iii. A scatter diagram of (x_i, e_i) and its regression line. (The numbers e_i are the residuals.)
iv. A scatter diagram of $(\hat{y}_i, e_i)$ and its regression line. (The numbers $\hat{y}_i$ are the predictions.)

Note: Make your function "look" pretty. Indenting and using comments are suggested. Note that a comment begins with a pound symbol, #.

2. Run your function on the datasets

a. miles.emissions
b. wheat.potato