

Homework #3
Economics 113
Introduction to Econometrics
Professor Spearot
Due Monday, February 9th, 2008 – Beginning of class

For the following examples, discuss whether each satisfy the four assumptions we use for linear regression. If not, which assumptions are violated, and why?

- a) I wish to examine the relationship between wages and education for residents of California. To do so, I collect data from a random Econ 113 class on years of post-secondary education (*educ*), the most recent wage offer of each student (*wage*), and estimate the following equation:

$$wage = \beta_0 + \beta_1 educ + \varepsilon$$

- b) I run the same regression as in (a) but instead I decide to use only a sample of seniors, who all have been in school for four years.
- c) Finally, I run the following adjusted specification, where *score* is the score on the first midterm.

$$wage = \beta_0 + \beta_1 educ + \beta_2 score + \varepsilon$$

Does this solve any of the previous problems in (a) or (b)

- d.) What happens to the estimates in (c) if I measure education in months rather than years?