**Homework 8 general feedback:**

**Question 11:**

Most of you had a really hard time interpreting the logX, logY relationship (I did too). This is understandable and reinforces the point we have made to you about how transformations may help with some model assumptions, but they should only be done in cases of extreme violation of assumptions and when there is no other viable alternative. You could have interpreted the relationship in a few different ways:

You could just say something about the relationship of the actual log variables like: “for every logx increase/decrease, logy increased/decreased”.

Since you probably chose a log2 transformation: From lab (and in key): you could divide 1 by your coefficient: 1/.54 (to get a one-unit change in y) ~ 1.85. so when GDP almost quadruples (increases by a factor of 4, i.e. doubles twice), infant mortality is cut in half.

From your classmate Micahel’s smarts: # “It appears that each 1 unit increase in log2GDP causes a 30.5% decrease in raw infant mortality rate (165.857083-115.279648)/165.857083 = .3049459. # 2^-.525 = .695, 1-.695 = .305.”

But again, this is why we avoid these transformations (and you may want to as well). You won’t have to do anything like this on the take-home or in-class exams.

**Question 12:**

Analysis question number 12 was a pretty tricky one. Most of you noted that the sum of squared errors got smaller when you used transformed variables in a new model. That is true. However, it is very important to note that the errors in this new model can’t really be compared with the errors in the old model in a fair way. Many of you went on to say that the lower errors meant you were making “better predictions”. It is important to note that while you may end up with a better model r squared using transformed variables you must realize that the model with the transformed variables is asking a different question than the model with the raw variables. See the HW answer key (and probably comments in your own homework feedback) for an analogy that helps explain this issue.