

Problem Set 1: Due ~~Thursday, 2/13/2014~~ **Tuesday, 2/25/2014**  
by the beginning of class

PUBHLTH 690NR: Statistical Modeling and Data Visualization (UMass-Amherst)  
Instructor: Nicholas G Reich

Please note: this assignment has been modified as of 2/11/2014. Additions to the assignment are in boldface.

**You must hand in a digital source file that the instructors can compile (using knitr) to create a PDF or HTML file with your problem set. The entire problem set must be handed in as a digital file. Equations must be typeset in the document itself. The TA will provide instructions about how to hand in assignments.**

1. ~~Read KNN chapter 1-3, OpenIntro Chapter 7~~
2. **Read KNN chapters 1, 6.1-6.5, 6.8-6.9, 7.5-7.6, OpenIntro Chapters 7 and 8**
3. Derive the SLR estimators  $\hat{\beta}_0$  and  $\hat{\beta}_1$ .
4. Problems from KNN Chapter 1: 5, 6, 7, 10, 11, 27, 28, 36, 42
5. ~~Problems from KNN Chapter 2: 1, 10, 13, 28, 30, 50, 68~~
6. ~~Problems from KNN Chapter 3: 8, 19, 24~~
7. **Problems from KNN Chapter 6: 2, 3, 5(a-d), 9, 10(a,b,d), 15(a-d), 22, 31**
8. *EXTRA CREDIT: Create a simulation where you show an example of omitted variable bias.*