Stat 230, Spring 2016
Homework 9: Simultaneous Equations

Read and understand:
Ch 9: C2-3,5,E1. (E1 might make the simulation easier.)

Due Thursday 4/7/16 at 11:59pm on bcourses.
Do Lab 13 in the text on page 306-308, including bonus point questions at the end.

Do the simulation described on pags 199-200. Let $q = 1$, $\beta = 1$, and do the simulation 4 times total with these conditions: $n = 10$ or $n = 1000$, and for each of those cases, with $C = .1$ or $C = 0.5$. Let δ_i, ϵ_i have variance 1 and $\text{cov}(\delta_i, \epsilon_i)$ is 0.3. As stated in the text description, $p = 1$, and no intercept is needed. Do a simulation to get 1000 repetitions of $(\hat{\beta}_{OLS}, \hat{\beta}_{IVLS})$. Compare the MSEs: which one performs best for each of the 4 simulations? You need not compare methods for estimating $\text{var}(\epsilon_i)$. Discuss briefly in the context of technical issue ii) on page 197.