Homework 5

Due date: Homework is due on Monday, November 10 at 12:00 Noon. Homework should be turned into the box for your section (outside of Room 253 Sloan).

1. How would you respond to a friend who asks you, "How can we say that the sample mean is a random variable when it is just a number, like the population mean?" For example, suppose we are in interested in the average income in a given population. A simple random sample of size 50 produced $\bar{x} = \$52,500$; how can the number 52,500 be a random variable?

2. Suppose that a simple random sample is used to estimate the proportion of families in a certain area that are living below the poverty level. If this proportion is roughly .15, what sample size is necessary in order that the standard error of the estimate be .02?

3. Moore and McCabe, Chapter 5. Problem 5.66

4. Moore and McCabe, Chapter 6. Problem 6.22

5. Moore and McCabe, Chapter 6. Problem 6.26