Introduction to Econometrics
Fall 2007
Assignment 1

Today’s Date: 9/10
Due Date: 9/17

Please show all of your work and clearly indicate your final response to each question.

1. W B.6
2. Two independent random samples are taken from a normal population with mean 40 and variance 16. The sample sizes are 5 and 20, and the corresponding sample means are denoted $\bar{X}_1$ and $\bar{X}_2$. Determine

   1. $E(\bar{X}_1 - \bar{X}_2)$
   2. $Var(\bar{X}_1 - \bar{X}_2)$
   3. $P(|\bar{X}_1 - \bar{X}_2| > 4)$. (Hint: Since the random variable $X$ is distributed as a normal, so are the sample means and the difference between them, since linear combinations of normal random variables follow a normal distribution.)

3. W B.10
4. W C.1
5. W C.2
6. W C.10