Economics 3250 Dr. Lozada
Spring 2012 Exam 1

Do Not Turn This Page Over Until You Are So Instructed!

This exam has 25 points. There are six questions on the exam. Most of the questions are worth 4 points, but one is worth 5 points.

Put your answers to the exam in a blue book or on blank sheets of paper.

You have the entire class period (that is, until **2:45pm**) to take this test.

Answer the questions using as much precision and detail as the time allows. Correct answers which are unsupported by explanations will not be awarded points.

Answer all of the following six questions.

1. **[4 points]** Use an example with numbers to illustrate the difference between the concepts of "marginal" and "average." In your example, the marginal should not equal the average.

2. **[4 points]** An example of the "Condorcet Paradox" is:

   - Voter 1 ranks Clinton above Bush above Perot.
   - Voter 2 ranks Perot above Clinton above Bush.
   - Voter 3 ranks Bush above Perot above Clinton.
   - Clinton vs. Bush: Clinton wins.
   - Bush vs. Perot: Bush wins.
   - Clinton vs. Perot: Perot wins.

   What does this have to do with our course?

3. **[5 points]** Give an example of why and how hedonic pricing is used in environmental economics.

4. **[4 points]** The "St. Petersburg Paradox" was discussed in class. It is based on the (theoretical) "St. Petersburg Lottery" first described by David Bernoulli in 1738; in this lottery, a coin is flipped again and again until a tail appears. When a tail appears, the game is over.

   If a tail appears on the first coin flip, the payoff is \$2. (The chance of this happening is 1/2.) If a tail first appears on the second coin flip, the payoff is \$4. (The chance of this happening is 1/4.) If a tail first appears on the third coin flip, the payoff is \$8. (The chance of this happening is 1/8.) If a tail first appears on the fourth coin flip, the payoff is \$16. (The chance of this happening is 1/16.) And so on; so if a tail first appears on the nth coin flip, the payoff is $\$2^n$. (The chance of this happening is $1/2^n$.)

   The "expected value" of this lottery is $1 + 1 + 1 + 1 + \cdots = \infty$.

   (a) What is the nature of the "paradox"? Hint: think about how much money you would be willing to pay for the chance to play this lottery.

   (b) What implications does this have for how useful "expected value" is in describing how people behave under uncertainty?

(c) Does "expected utility" have the same flaws as "expected value"?

5. [**4 points**] The "Coase Theorem" is sometimes summarized by saying that a socially optimal level of pollution (or output) is achievable without government intervention. In what sense does this summary distort the real-world economic importance of the Coase Theorem?

6. [**4 points**] In class, we discussed the textbook's suggestion that:

	Command and Control	Economic Incentive Instruments
Efficiency	low	high
Equity & Political Acceptability	high	low
Administrative Efficiency	high	low

Explain, and support or oppose, the positions expressed in this table. (For some of these entries, both "support" and "oppose" can be correct, and you will be graded on how well you defend whichever position you take.)