ASSIGNMENT 3

Answers to this (challenging!) assignment are due back by Wednesday, February 10, 2016.

1. Movie rentals

You like to rent movies to watch in the evening. If rentals become cheaper, you will rent more movies, but only up to a maximum of 7 per week – at which point you are watching a movie every evening. Draw a plausible budget line and indifference map, and use this graph, and an accompanying demand curve, to show the effect on movie rentals of lower and lower prices for renting movies.

2. Consumer surplus

There used to be a toll of 50 cents on both the inbound and outbound tunnels leading to Logan airport. They were replaced by a $1 on the inbound side and no toll on the outbound lane. Assume that vehicles cause almost no wear and tear to the tunnels as they pass through.

a. Show that if collection costs are trivial, it is preferable from a welfare point of view to collect the 50-cent tolls in both directions.

b. Suppose that the inbound lane is always congested. Explain why the removal of the toll would not lead to any benefit to consumers, and indeed would lead to greater social cost overall.

3. Bets

You have just won $100,000 a year for life in the state lottery. Use a diagram showing the tradeoff between leisure (on the horizontal axis) and goods (on the vertical axis) for the following:

a. Show how the lottery winnings affect your budget line.

b. After winning the lottery you continue to work the same amount of hours every day. What is the income effect of the lottery gain?

c. Now your employer increases your hourly wage. Using the income effect from b., as well as a reasonable substitution effect, explain whether you choose to work more hours per week.

4. Labor Supply Curve

If your labor supply curve slopes forward at low wages and bends backward at high wages, is leisure a Giffen good? If so, at high or low wage rates? [Question thanks to Perloff.]

5. Strawberries and Cream

Your roommate always puts cream on her strawberries; she never eats strawberries or cream in any other way. Derive and plot her demand curve for strawberries.

6. Elasticities

In December 2003, a mad cow was found in the U.S. and many countries stopped buying U.S. beef. It was estimated that as a result the supply of beef to the U.S. market rose by 10.4% in the short-run. If the own-price elasticity of demand for beef is -1.6, by how much would you expect the price of beef to change? Explain.
7. Labor Supply Curve

According to Prescott (2004), U.S. employees work 50% more than workers in Germany, France, and Italy, because marginal tax rates are lower in the U.S. If we assume that workers in all these countries have the same tastes for leisure and goods, is it necessarily true that U.S. employees will work longer hours? Explain, using a graph.

Does Prescott’s evidence tell us anything about the relative sizes of the substitution and income effects? Explain. [Question thanks to Perloff.]

8. Immigration

Borjas (2003) argues that immigration into the U.S. increased the supply of unskilled workers by 11% between 1980 and 2000, and reduced the wage of locally-born unskilled workers by 3.2%. Does this information allow us to make any inferences about the elasticity of supply or demand? Which curve (or curves) changed, and why? Illustrate with a supply and demand diagram. [Question thanks to Perloff.]

9. Elasticities

Here is a recent article from the *Boston Globe* (February 2, 2016). Calculate the own-price elasticity of demand for Uber rides in NYC, based on the numbers in the article.

**Uber drivers protest NYC price cuts**

Hundreds of Uber drivers went on strike outside the company’s New York City offices Monday, chanting and holding signs with slogans like “Uber is Wal-Mart on Wheels,” to protest price cuts. Last week Uber Technologies Inc., the ride-hailing leader, reduced rates on its basic service, uberX, in New York City by 15 percent. A trip from Midtown to LaGuardia Airport is now $37.12, compared with $43.67 before. Uber’s reasoning is that lower fares spur demand so drivers don’t have as much down time between trips. Over the past weekend, drivers spent 39 percent less time without a fare and as a result saw a 20 percent increase in hourly earnings compared with two weekends earlier, the company said. — BLOOMBERG