Assignment 2

Labor Economics 05/19/2011

Problem I:
(a) Suppose that a worker’s commute involves traveling a long distance on a highway that is about to start charging toll fees of $Y. There is no other way for the person to get to her job. What will happen to hours of work as a result of this increase in commuting costs?
(b) Suppose a worker’s current job is located very near her house, so that the time it takes to commute to work is essentially zero. The firm is considering a move to another town, and it will take the worker 10 hours per week to get to and from work, regardless of how many hours the worker actually decide to work. What will happen to the worker’s hours of work (defined as hours actually spent on the job) as a result of this increase in commuting costs?
(c) Compare the answers in the two parts of this problem, and discuss why the difference arises.

Problem II: Shelly’s preferences for consumption and leisure can be expressed as

\[ U(C, L) = (C - 200) \times (L - 80) \]

This utility function implies that Shelly’s marginal utility of leisure is \( C - 200 \) and her marginal utility of consumption is \( L - 80 \). There are 168 hours in the week available to split between work and leisure. Shelly earns $5 per hour after taxes. She also receives $320 worth of welfare benefits each week regardless of how much she works.

(a) Graph Shelly’s budget line.
(b) What is Shelly’s marginal rate of substitution when \( L = 100 \) and she is on her budget line?
(c) What is Shelly’s reservation wage?
(d) Find Shelly’s optimal amount of consumption and leisure.

Problem III: Suppose both Jack and Jill have 10 hours a day to allocate to either the household sector or to the labor market. Jack’s hourly wage is $60 and the marginal value of his time in the household is $25 per hour. Jill’s hourly wage is $50 and the marginal value of her time in the household is $20 per hour. Who will specialize in the household and who will specialize in the labor market?