GS/ECON 5010 section "B" Assignment 2 F2011

due : Wednesday October 19 2:30 pm

Do all 5 questions. Each counts 20%.

1. Could the following 3 equations be Hicksian demand functions (if the reference level of utility u were high enough so that $u + \ln p_2 + \ln p_3 \geq 2 \ln p_1$)? Explain briefly.

$$x_1(\mathbf{p}, u) = u - 2\ln p_1 + \ln p_2 + \ln p_3$$
$$x_2(\mathbf{p}, u) = \frac{p_1}{p_2}$$
$$x_3(\mathbf{p}, u) = \frac{p_1}{p_3}$$

2. Find all the violations of the strong and weak axioms of revealed preference in the following table, which indicates the prices p^t of three different commodities at four different times, and the quantities x^t of the 3 goods chosen at the four different times. (For example, the second row indicates that the consumer chose the bundle $\mathbf{x} = (50, 10, 40)$ when the price vector was $\mathbf{p} = (2, 1, 1)$.)

t	p_1^t	p_2^t	p_3^t	x_1^t	x_2^t	x_3^t
1	1	1	1	30	40	30
2	2	1	1	50	10	40
3	1	2	1	60	20	10
4	1	1	2	30	50	20

3. If a person was an expected utility maximizer with a utility–of–wealth function

$$u(W) = -W^3 + 30W^2 + 30,000,000W$$

(for $W < 10,000$, where W is her wealth, in thousands of dollars), give an example of a gamble g for which $E[u(g)] < u(Eg)$ for this person, and an example of a gamble g' for which $E[u(g')] > u(Eg')$.

4. How much would a person with wealth W be willing to pay for full insurance against a loss of L, if the probability of the loss were π, and if the person had a constant coefficient of relative risk aversion of 2?

5. For what values of (x_1, x_2) does the production function

$$f(x_1, x_2) = a\sqrt{x_1} + b(x_2)^2$$

exhibit locally increasing returns to scale, where a and b are positive constants?