GS/ECON 5010   Assignment 2   F2010

due : Wednesday October 20   8:30 am

Do all 5 questions. Each counts 20%.

1. Calculate a person's Hicksian demand functions, if her expenditure function were

$$e(p_1, p_2, p_3, u) = 2(\sqrt{p_1} + \sqrt{p_2})\sqrt{p_3}u$$

2. Calculate a person's Marshallian demand functions, if her expenditure function were

$$e(p_1, p_2, p_3, u) = 2(\sqrt{p_1} + \sqrt{p_2})\sqrt{p_3}u$$

3. Is it possible that

$$e(p_1, p_2, p_3, u) = [p_3(\ln p_1 - \ln p_2) + p_2]u$$

is an expenditure function for some consumer (if $p_1 > p_2 > p_3$)?
Explain.

continued

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4. The following table lists the prices of 3 goods, and the quantities a consumer chose of the goods, in 4 different years.

From these data, what can be concluded about how well off the consumer was in the different years? Explain briefly.

t	p_1^t	p_2^t	p_3^t	x_1^t	x_2^t	x_3^t
1	1	1	1	8	5	7
2	2	1	4	3	10	5
3	2	4	4	5	8	5
4	5	2	6	4	5	10

5. 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 three different times, and the quantities x^t of the 3 goods chosen at the three different times. (For example, the second row indicates that the consumer chose the bundle $\mathbf{x} = (15, 15, 20)$ when the price vector was $\mathbf{p} = (15, 10, 10)$.)

t	p_1^t	p_2^t	p_3^t	x_1^t	x_2^t	x_3^t
1	10	5	5	20	20	10
2	15	10	10	15	15	20
3	5	10	5	10	30	15
4	5	5	10	16	16	16