

due : Monday November 28 before class

Do all 5 questions. Each counts 20%.

1. What does the contract curve look like for a 2–person, 2–good exchange economy, if the preferences of the two people could be represented by the utility functions

$$u^1(x_1^1, x_2^1) = 100 - \frac{1}{x_1^1} - \frac{1}{x_2^1}$$

$$u^2(x_1^2, x_2^2) = x_2^2 + 100 \ln x_1^2$$

where x_j^i is person i 's consumption of good j ?

2. What are all the allocations in the core of a 3–person, 2–good economy, in which each person has the same endowment vector, $e^i = (1, 1)$, and in which the preferences of the 3 people can be represented by the utility functions listed below?

$$u^1(x_1^1, x_2^1) = x_1^1$$

$$u^2(x_1^2, x_2^2) = x_2^2$$

$$u^3(x_1^3, x_2^3) = x_1^3 + x_2^3$$

3. How would the equilibrium prices of the goods vary with the people's endowments in a 2–person, 2–good exchange economy, if each person's preferences could be represented by the utility function

$$u^i(\mathbf{x}^i) = -\frac{1}{x_1^i} - \frac{1}{x_2^i}$$

where x_j^i was person i 's consumption of good j ?

continued **over**

4. Find all the pure-strategy Nash equilibria in the following strategic-form two-person game.

	LL	L	R	RR
tt	(4, 6)	(9, 3)	(2, 5)	(10, 1)
t	(1, 2)	(3, 4)	(4, 3)	(10, 2)
b	(2, 7)	(7, 2)	(5, 7)	(0, 0)
bb	(3, 5)	(8, 6)	(8, 8)	(12, 3)

5. Find all the Nash equilibria (in pure or mixed strategies) to the following two-person game in strategic form.

	L	R
t	(12, 6)	(6, 4)
m	(0, 8)	(7, 12)
b	(2, 2)	(8, 4)