Economics 43535: Assignment 4
(due Wednesday, April 30)

Professor Jensen Spring 2014

Assume the set of feasible social outcomes for a consumer is $X = \{(x_1,x_2) : x_1 \geq 0 \text{ and } x_2 \geq 0\}$. It is convenient to think of x_1 and x_2 as the quantities of good 1 and good 2 consumed by this person, so any $x = (x_1,x_2)$ in X is a consumption bundle.

1. Assume this consumer's preferences can be represented by the utility function

$U(x_1,x_2) = (x_1)^{1/2} (x_2)^{1/2}$.

a. What does an indifference curve look like for this person? HINT: graph the "unit indifference curve" given by $(x_1)^{1/2} (x_2)^{1/2} = 1$.

b. Does this person's preferences satisfy continuity? Explain.

2. Assume this consumer's preferences are defined as follows. For any pair of bundles $x = (x_1,x_2)$ and $y = (y_1,y_2)$ in X:

$x \succ y$ if and only if either $x_1 > y_1$, or $x_1 = y_1$ and $x_2 > y_2$.

1. What does an indifference curve look like for this person? HINT: You may not want to assume that indifference curves are well-defined for this person. Instead, you might want to consider answering the following alternative (but equivalent) question: Given this definition of strict preference, and given any two bundles x and y that are different (i.e., $x_1 \neq y_1$ and $x_2 \neq y_2$), is it ever possible for this consumer to be indifferent between x and y?

2. Consider the four consumption bundles w = (1,1), x = (2,1), y = (3,2), and z = (3,3). How would this consumer rank these bundles?

3. Does this person's preferences satisfy continuity? Explain.