Introduction to Economic Analysis  
Fall 2006  
Problem Set I

• Question 1

– Consider a group of individuals $A$, $B$ and $C$ and the relation taller than, as in $A$ is taller than $B$. Does this relation satisfy the completeness and transitivity properties?

• Question 2

Determine if completeness and transitivity are satisfied for the following preferences defined on $x = (x_1, x_2)$ and $y = (y_1, y_2)$.

- $x \succeq y$ if and only if $x_1 < y_1$ and $x_2 \leq y_2$.
- $x \succeq y$ if and only if $x_1 \leq y_1$ and $x_2 \leq y_2$.
- $x \succeq y$ if $\text{Max}\{x_1, x_2\} \geq \text{Max}\{y_1, y_2\}$.

• Question 3

Let $p_1, p_2, p_3, m$ be the set of prices and income. The utility function is given by:

$$u(x_1, x_2) = x_1^{\alpha_1} x_2^{\alpha_2} x_3^{1-\alpha_1-\alpha_2}$$

1. Determine the demanded bundle as a function of the prices, $p_1$, $p_2$, $p_3$ the income, $m$, and the parameters $\alpha_1, \alpha_2$, where $\alpha_1$ and $\alpha_2$ are both between 0 and 1.

2. What fraction of her income a consumer with this utility function will spend on good 1? Does this fraction depend on income $m$? Does it depend on the price ratio, $\frac{p_1}{p_2}$? And on $\frac{p_2}{p_3}$?