Tutorial 1

1. Consider the preference relation $\succeq$ defined by $(x_1, x_2) \succeq (x_1', x_2')$ if and only if either (i) $x_1 > x_1'$ or (ii) $x_1 = x_1'$ and $x_2 \geqslant x_2'$. Is this preference relation complete, transitive, and increasing?

2. Draw the budget line for prices $(1, 2)$ and $(2, 1)$ when expenditure is 2. Draw the consumption bundle $x = (1, 1)$. Is this bundle affordable at either budget?

3. Suppose a preference maximizing consumer in period 1 buys $x^1 = (2, 2)$ when prices are $p^1 = (1, 1)$ and $x^2 = (0, 3)$ when prices are $p^2 = (2, 1)$. In which period is the consumer better off (i.e. in which period does the consumer obtain a better bundle)?

4. Consider a consumer who buys $x^1 = (1, 2)$ when prices are $p^1 = (1, 2)$ and $x^2 = (2, 1)$ when prices are $p^2 = (2, 1)$. The consumer does not satisfy WARP. Prove that there is no increasing preference $\succeq$ which can explain the consumer's behavior. That is, show that there is no increasing $\succeq$ so that $x^1 \succeq x$ for all $x \in B(p^1, p^1 \cdot x^1)$ and $x^2 \succeq x$ for all $x \in B(p^2, p^2 \cdot x^2)$.

5. Define a non-increasing preference $\succeq$ which can explain the behavior of the consumer in the previous question.

6. The first maxim of classic consumer theory states that "What is chosen is preferred to what could have been chosen." Can you think of some situations where this maxim may be problematic?