Problem Set One

EC201

Problem 1. With your own example, explain how one party/agent/firm/consumer's choice set influences the feasibility set of another party/agent/firm/consumer.

Problem 2. In class, we noted that the choice set of a consumer is the set of all goods and services that can be purchased in a market. Consider the choice set from the perspective of a firm. What might their choice set be?

Problem 3. As you might have experienced over the past year, the prices of some goods have increased faster than others (and faster than income in some cases). Explain with the help of a graph and math, what effects this would have on a consumer's budget set.

Problem 4. In class, we defined the consumer's budget set with respect to two goods so that we could visualize the budget line. We also assumed that the income of the consumer was a parameter of the problem (i.e. something that is fixed and which the consumer has no choice over). We could extend this model, though, to capture the fact that income is actually something individuals choose. Please write down such a model.

- What is the choice set of the consumer?
- What is the constraint function of the consumer? How might this constraint function be parameterized?
- What is the feasibility set of the consumer?
- What is the opportunity cost of leisure in this model?

Problem 5. In class, we explained that we could represent the price of n goods and services via a vector in $\mathbb{R}^n_+$. In doing so, we assumed that the price of a good or service didn't depend on how much of the product the consumer purchased. In some cases, though, this assumption is violated as when the producer will discount the price as the quantity purchased of the good increases.

To be specific, let's assume that the choice set of the consumer is $\mathbb{R}^2_+$, and that the price of x_2 depends on how much of x_2 the consumer purchases. To the best of your abilities, please derive the budget line. That is, please define the function, f, that maps from X_1 to X_2 such that for any $x_1 \in X_1$ and any value $x_2 > f(x_1)$ the bundle (x_1, x_2) is not feasible.