**Homework**

**Due date: 30 Dec.**

**(One of the questions will be asked a quiz question during class)**

1. Suppose that there are two individuals in an economy. Individual 1 can perfom high-skill tasks and individual 2 can only perform low-skill tasks. Each individual solves

Note that the wage rate for labor supply is differentiated according to individual as each individual supplies a different type of labor. The production function is

Assume that the utility of individual is

1. Compute the competitive equilibrium.
2. Show that individual 1 has more income in equilirium if and only if
3. Let denote the weight in linear welfare program given by:

s.t.

Prove that must hold so that the welfare program yields the competitive equilibrium allocation as the solution.

1. Solve part (a) and (b) assuming

2) Consider the standard utility maximization problem:

s.t.

where is the level of consumption, is the level of leisure, and is the wage rate.

1. Derive the first oder conditions.
2. Let denote the optimal level of consumption and lesiure. Find the weakest conditions on so that demand is nıormal, i.e.:

(Hint: See the conditions of “normality” on p.9 of “Should Robots be Taxed?”)