

# Microeconomics

Fall 2011

Class #12: Revision exercises.

David Henriques

Classes: 40, 41

## Question 1

Consider an economy where there are only two consumers, Albert and Ben, and only two types of goods. No production of either good is possible. Quantities of the economy's only two goods are denoted by  $x$  and  $y$ . Albert owns the bundle  $(0; 5)$  and Ben owns the bundle  $(30; 5)$ . Albert's and Ben's preferences are described by the utility functions, respectively,

$$U_A(x_A, y_A) = x_A + y_A \quad \text{and} \quad U_B(x_B, y_B) = x_B y_B.$$

(i) Draw the Edgeworth box diagram, including each person's indifference curves through the endowment point. Identify the region of mutual advantage, i.e., the region where both consumers are better off as compared to the initial endowment.

(ii) Determine the Walrasian equilibrium price(s) and allocation(s).

## Question 2

Consider a consumer facing a budget constraint with endowments. Under these conditions, can the demand curve for a normal good be upward sloping? Justify.

## Question 3

A firm has the production function  $Q = \sqrt{KL}$ .

(i) Does the production function exhibit increasing, decreasing, or constant returns to scale?

Suppose that the wage rate (price of one unit of  $L$ ) is €2 per hour and the rental rate (price of one unit of  $K$ ) is €8 per hour. The firm decides to set output equal to 8 units.

(ii) What are the optimal levels of  $K$  and  $L$ ?

(iii) What are the firm's total costs?