

Name:

Introduction to Microeconomics Final Exam

January 27, 2003

Good Luck!! You have four hours to complete the whole exam. Remember that you have to correctly answer 15 out of the following 20 vocabulary words!

Part 1: Definitions

Natural Monopoly:

Price Discrimination:

Sunk Costs:

Competitive Market:

Marginal Revenue:

Average Variable Cost:

Diminishing Marginal Product:

Economic Profit:

Microeconomics:

Normal Good:

Supply:

Opportunity cost:

Market Power:

Law of Demand:

Tax Incidence:

Willingness to Pay:

Budget Constraint:

Indifference Curve:

Producer Surplus:

Perfect Complements:

Part 2:

*In the space provided, please answer the following questions briefly and with precision. You may use **graphs** to aid your explanations. However the graphs must be easily explained.*

Theoretical Questions (6.5 points)

1. (1 pt.)

Suppose that a consumer has an income of R . She is confronted with the possibility of the consumption of two goods, x and y . The price of good y is p_y . Graphically obtain the individual demand curve of the good x for our consumer. Given her preferences, her income, and the price of the good y .

2. (1.5 pts.)

A business which operates in a perfectly competitive market has a total cost function of $TC=f(q)$.

2.1) Obtain the conditions for profit maximization of this business, and explain your answers briefly.

2.2) Assuming that the MC, the AVC, and the ATC take a “u” shape, show graphically and explain the supply curve of this business in the short-run, including the condition for shut down (when a business would decide to stop production for a specific time period).

2.3) Obtain graphically (and explain) the supply curve of this business in the long run, including the condition to exit the market.

3.) Luis P. is a skateboard salesman in a competitive market in Spain. The boards are made of wood, rubber and fiberglass. *Represent graphically and explain* what will happen to the supply and demand curves of Luis' business in the following cases: (EACH CASE IS DISTINCT).

3.1) Luis's wife has a baby and thus Luis decides that he needs to raise the price of his skateboards to pay for the medical bills.

3.2) Jorge, Fonzie, and Manuel steal half of Luis' stock of skateboards.

3.3) As he walks to work Luis finds a 500€ bill on the ground.

3.4) The Spanish stock market falls to such an extent that there is a recession (people have less money to spend on luxuries).

3.5) Fires destroy millions of acres of trees, affecting the price of wood.

4. (1pt.)

The market for cellular phones is in equilibrium.

4.1) Represent the equilibrium and show the producer and consumer surplus.

The government now wants to guarantee that the producers of ribs have a higher surplus than before, and therefore puts a minimum price on ribs, which is higher than the equilibrium price.

4.2) What happens in the rib market? What happened to quantity demanded and supplied?

4.3) What happened to consumer surplus?

4.4) What happened to producer surplus? With the price minimum, what determines the effect of the government policy and the growth of producer surplus?

Represent your answers graphically.

5. (1 pt)

The market for gasoline is in equilibrium. OPEC, one of the principal producers (with the power to displace the supply curve) find that they are earning low total revenue. In order to increase its revenue, the countries of OPEC decide that they are going to reduce their supply to try to effect the equilibrium price.

Analyze (graphically, with comments on the results that you acquire) how this decision will affect the total revenue of the gasoline producers if:

5.1) The elasticity of demand is 0.

5.2) The elasticity of demand is ∞ .

5.3) The elasticity of demand is 1.

5.4) The elasticity of demand is linear (and decreasing)

6) Anna is a lady who loves rice crispy treats so much that in her land (Candyland) she can spend her whole salary of \$1500 per month just on these delicious treats. However she also loves to burn off the fatty treats by jumping rope. She tends to use many jump-ropes in order burn the treats off. A bunch of ropes costs \$10.00, and a box of treats costs \$5.00. She is happiest when consuming 100 treats. What will happen if the vendors of the treats find that the cost of marshmallows (an input in the making of their treats) drops significantly?

6.1) Describe and show graphically what Anna's budget constraint and indifference curves look like before and after the price changes. What are Joey's tastes like? Why?

6.2) Show and explain in as much detail as possible, what happens in terms of income and substitution effects?

Practica (3.5 points)

Cathy is trying to decide what she will spend the 1600 euros that she will be receiving as a birthday gift. Upon finishing her microeconomics final exam, Cathy decides to go shopping for books and clothes (we are assuming that these are the only two goods that Cathy can buy). The function of utility for Cathy is $U=x \cdot y$, where x and y are the amount of books and clothes that she buys respectively. If the price per unit of clothes is $P_y=2$:

- 1) Find Cathy's individual demand function for books.
- 2) Imagine that the market of buyers is composed of 9 other book buyers whose individual demand is identical to that of Cathy. Find the market demand.

There are two businesses which produce books: "Alota Cultura, Inc." and "Merry-Roster, Inc." The two businesses need 10 and 20 units of fixed capital (respectively) whose costs are 2€ per unit. The two businesses use distinct technologies for their production processes. Their necessities for work (variable factor), to produce an amount q of the product which correspond to the following functions:

- Alota Cultura Inc: $L = 2q^2 + q$

- Merry Roster Inc: $L = q^2 + 3q$

The price of the factor of work is $w=2€$ per unit.

- 3) Find the costs functions for the businesses and represent graphically the functions of MC, AVC, ATC.
- 4) Supposing that the market in which these business operate is perfectly competitive (even though there are only two businesses), find the individual supply curve for each business as well as the market supply.
- 5) Find the equilibrium quantity and the price in the market for books, given that there are 10 consumers and our 2 producers. Represent graphically.
- 6) How many books does Cathy buy?
- 7) How many books does each business sell? How much does each receive in profit?
- 8) If the market for books is perfectly competitive, what will happen in the long run?