

**MICROECONOMICS I - Problem Set No.2**

0. General directions: a) write your first and last name in CAPITAL LETTERS; b) motivate your answers to the below questions, i.e., write the economic reasoning that led you to answer in the way you did.
1. Both in Spain and Portugal only two goods are produced (trains or cars), and only one input of production is used (labor). The following table contains the different amounts of both goods that can be produced with 1,000 hours of work in both countries.

	trains	cars
Spain	15	1,500
Portugal	5	1,000

Explain the comparative advantages/disadvantages of both countries in the production of the two goods. Which country should specialize in the production of cars?

2. The market for laptops in Spain is perfectly competitive and shows the following demand and supply lines:

$$Q_d = 100 - 5P$$

$$Q_s = 10P - 50.$$

- (a) Plot a graph describing market equilibrium and find the equilibrium price and quantity.
- (b) Assume that the demand line shifts to  $Q_d = 55 - 5P$ . Which factors could explain a similar shift? What are the new equilibrium price and quantity?
- (c) In the new situation (point *b*), assume that the government introduces a price ceiling equal to  $P_c = 5$ . Would this policy cause either excess demand or excess supply? By what amount?
3. How does each of the following events affect the market for economics degrees? For each event, show which curve (i.e., demand or supply) shifts and predict the resulting changes in equilibrium price and quantity.
- (a) All economists join a new powerful trade union (called PRI, People Respond to Incentives) and bargain a higher wage for their teaching duties.
- (b) Madonna announces in a press conference that economics is completely useless and nobody should hire economists in the future. Madonna's statements are reported by all major newspapers in the world and have a strong effect on the opinion of youngsters.
- (c) What is the joint effect of the above two events?

4. The market for last-generation mobile phones in Spain is perfectly competitive and displays the following demand and supply lines:

$$Q_d = 1,000 - 2P$$

$$Q_s = 100 + P.$$

- (a) Plot a graph describing market equilibrium and find the equilibrium price and quantity.
- (b) Assume that, thanks to a technological improvement, the supply line shifts to  $Q_s = 400 + P$ . What are the new equilibrium price and quantity?
- (c) When moving from the old equilibrium point to the new one, what's the elasticity of demand?
- (d) Go back to point *b* and assume that the government introduces a price floor equal to  $P_f = 300$ . Would this policy cause either excess demand or excess supply? By what amount?

5. A student has an entertainment budget of 200 euros per month and spends it all on either concert tickets (at the price of 40 euros) or movie tickets (at the price of 10 euros). Suppose movie tickets decrease in price, first falling to 5 and then to 2. Graph the three budget constraints in separate diagrams, with movies on the horizontal axis. If the student's demand for movies,  $D$ , is represented by the function  $D = 10 - P$ , where  $P$  is the price, graph both the demand curve for movies (in a new graph) and the points the student will choose on each budget constraint of the previous three graphs.
6. Tommaso loves playing baseball. He sends his outfits to the cleaners at the unit price of \$4. And he buys new balls at the unit price of \$2. His baseball budget is \$36 per week, which allows him his current consumption of 8 balls and 5 clean outfits.
- Plot his budget constraint (with balls on the horizontal axis), and label the optimal point he has chosen.
  - Now, assume that the price of a single ball rises to 3. Just comparing the old and the new budget constraints illustrate the logic of the substitution and income effects of this price change.
  - Now, assume that baseballs are a Giffen good. In which portion of the new budget constraint can the new optimal choice lie?