

**ECONOMICS 2
INTRODUCTION TO ECONOMICS**

PROBLEM SET 3

DUE AT THE BEGINNING OF LECTURE ON THURSDAY, MARCH 13TH.

You may work together on the problems, but the answers must be written up in your own words. For all questions, be sure to explain your answers and to use graphs whenever appropriate.

1. Suppose that the market for higher education is perfectly competitive.
 - a. Why might there be a positive externality associated with the consumption and production of higher education?
 - b. Show using welfare analysis that if there is a positive externality associated with higher education, the amount of higher education produced and consumed (measured, say, by the number of students enrolled in colleges and universities) will be less than socially optimal at the market equilibrium.
 - c. Does your analysis in part (b) suggest that government programs to subsidize higher education might be sensible? Why or why not?

2. How would you expect the following changes to affect the prevailing wage and employment of cotton textile workers in the United States?
 - a. Increased supplies coming from foreign producers lower the price of cotton textiles in the United States.
 - b. Widespread immigration increases the number of potential textile workers in the U.S.
 - c. The formation of a nationwide textile workers union leads to a negotiated wage that is significantly above the wage prevailing before the union was formed.
 - d. U.S. textile producers switch to newer, more efficient looms.

3. How would you expect each of the following developments to affect the investment demand curve? (Recall: The investment demand curve shows the relationship between the interest rate and the quantity of new capital demanded for purchase.)
 - a. The Federal Reserve lowers interest rates.
 - b. There is technological progress in the industry that produces capital goods.
 - c. Expectations about the future marginal revenue products of capital become less optimistic.

4. Suppose that all workers within France and within Belgium are identical. The typical worker in France can produce 4 shirts or 12 bottles of wine in a day; the typical worker in Belgium can produce 4 shirts or 4 bottles of wine in a day.

- a. Which country has a comparative advantage in wine production? In shirt production?
- b. Draw the production possibilities curve (per worker, per day) for each country before trade. (Put shirts on the vertical axis and wine on the horizontal axis.)
- c. What will the relative price of a bottle of wine be in each country before trade? Why? What is the range of possible relative prices for a bottle of wine after free trade? Explain.
- d. Suppose that with free trade the world relative price of a bottle of wine is $\frac{1}{2}$ (1 bottle of wine trades for $\frac{1}{2}$ shirt). Draw the consumption possibilities curve (again, per worker, per day) after trade for each country.

5. For each of the following decide whether the statement is true, false, or uncertain and explain why.

- a. Imposing a minimum wage that is above the equilibrium wage will cause firms to pay workers more than the marginal revenue product of the last worker hired.
- b. The present value of a payment to be received in the future will be lower the further in the future the payment is to be made.
- c. A monopolist produces at a level where marginal benefit is less than marginal cost.