

ECON 310

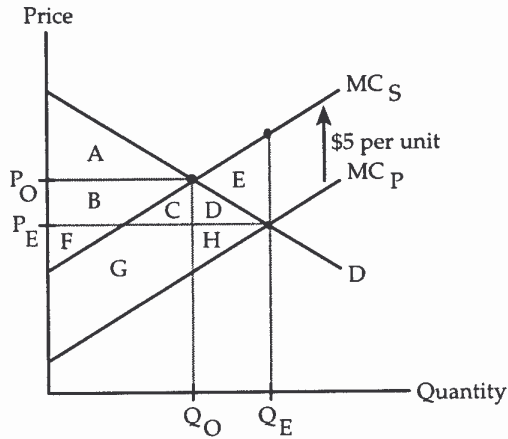
Assignment #5

**Due: Monday, December 3 at 9:00am**

Please write your answers on a separate piece of paper and show all of your work.

Please write legibly!

1. The following questions refer to the accompanying diagram, which shows the effects of a negative externality created by an industry's production. The equilibrium quantity in the absence of any attempt to internalize the externality is  $Q_E$  and the optimal quantity according to Pigovian analysis is  $Q_0$ . (10 pts)



- The external costs imposed by this externality is given by what area in the above diagram?
- Suppose there is no attempt to internalize the externality. Pigovian analysis indicates that the externality creates a deadweight loss equal to what area?
- According to a Pigovian analysis of this externality, when a tax of \$5 per unit is imposed on the firms in this industry, the external costs created by the firms' production will be equal to what area?
- Suppose there are no transactions costs. Also suppose the externality is internalized when the damaged parties offer producers a bribe of \$5 per unit to reduce their production. Coasian analysis indicates that social gain in this situation will equal what area?
- According to Pigou, what is the socially optimal quantity?

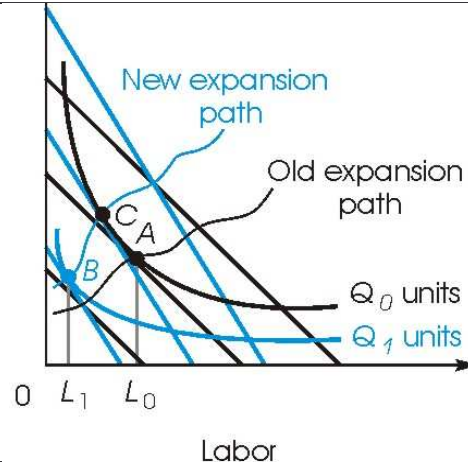
2. Use the following chart to answer the questions below. (10 pts)

|           | Non Excludable | Excludable |
|-----------|----------------|------------|
| Non Rival | <b>A</b>       | <b>C</b>   |
| Rival     | <b>B</b>       | <b>D</b>   |

- An empty public park falls under square \_\_\_\_
- A toll bridge not during rush hour falls under square \_\_\_\_
- A toll bridge during rush hour falls under square \_\_\_\_
- A fishery falls under square \_\_\_\_
- Cable television falls under square \_\_\_\_

3. Chapter 14, Problem Set #1 (6 pts)

4. The figure shows the effects of a wage \_\_\_\_\_ . The firm starts at point A and ultimately ends up at point B. Point C is an interim point that illustrates certain effects. The movement from A to C is the \_\_\_\_\_ effect while the movement from C to B is the \_\_\_\_\_ effect. (6 pts)



5. Chapter 16, Problem Set #4 (3 pts), 5 (3 pts), 6 (4 pts) (10 pts total)

6. Multiple Choice (8 pts- miss one for free)

- i. The short-run demand curve for labor for a firm in any type of market for its output coincides with
  - a. the upward sloping portion of the marginal revenue product curve.
  - b. the downward sloping portion of the marginal revenue product curve.
  - c. the downward sloping portion of the marginal product curve.
  - d. the marginal labor cost curve.
  
- ii. An increase in the price of labor will, in the short run, cause a competitive firm's
  - a. marginal cost to increase, the quantity it sells to decrease and therefore reduce the quantity demand of labor.
  - b. price of output to increase, leaving the demand for labor unchanged.
  - c. marginal revenue product of labor to decrease and therefore reduce demand for labor.
  - d. marginal revenue product of labor to increase and therefore increase demand for labor.
  
- iii. If labor and capital are complements in production, then an increase in the amount of capital will
  - a. reduce the firm's demand for labor.
  - b. raise the firm's marginal cost of production.
  - c. cause the scale effect to outweigh the substitution effect.
  - d. increase the labor's marginal product.
  
- iv. When will a wage increase cause a firm to produce more output in the long-run?
  - a. Always.
  - b. When labor and capital are complements in production.
  - c. When labor is a regressive factor.
  - d. Never.
  
- v. To maximize its profits, a monopsonist will always hire the quantity of labor at which marginal revenue product of labor
  - a. is downward sloping and equal to the market wage rate.
  - b. is downward sloping and equal to its marginal labor cost.
  - c. minus marginal labor cost is maximized.
  - d. is maximized.

- vi. Being a member of a cartel is similar to being in a Prisoner's Dilemma situation because
  - a. each firm is being held hostage by the decisions of other firms
  - b. of anti-trust laws which make price fixing a criminal offense.
  - c. to obtain the best possible outcome for all, an enforcement mechanism is needed.
  - d. of the presence of organized crime in industries with cartels.
  
- vii. In the Cournot model of oligopoly, firms produce
  - a. the competitive quantity.
  - b. the monopoly quantity.
  - c. more than the monopoly quantity but less than the competitive quantity.
  - d. less than the monopoly quantity.
  
- viii. In the Bertrand model of oligopoly, each firm chooses its output assuming its rivals
  - a. do not change their price.
  - b. do not change their output.
  - c. can enter and exit the industry costlessly.
  - d. use the tit-for-tat strategy.
  
- ix. The key defining feature of oligopoly, in addition to firms' market power, is
  - a. collusion.
  - b. free entry and exit.
  - c. firms take rivals' actions into account.
  - d. the Prisoner's Dilemma.