

Do not open this booklet until you receive permission from the instructor!

**Econ 200B
Autumn 2019
Final Exam**

Name:

TA/Quiz Section/Time:

125 points

You have 110 minutes to complete the exam.

Reminder: No graphing calculators or smart phones allowed! Please write legibly and show your work on every problem. Use two decimal places of precision when necessary.

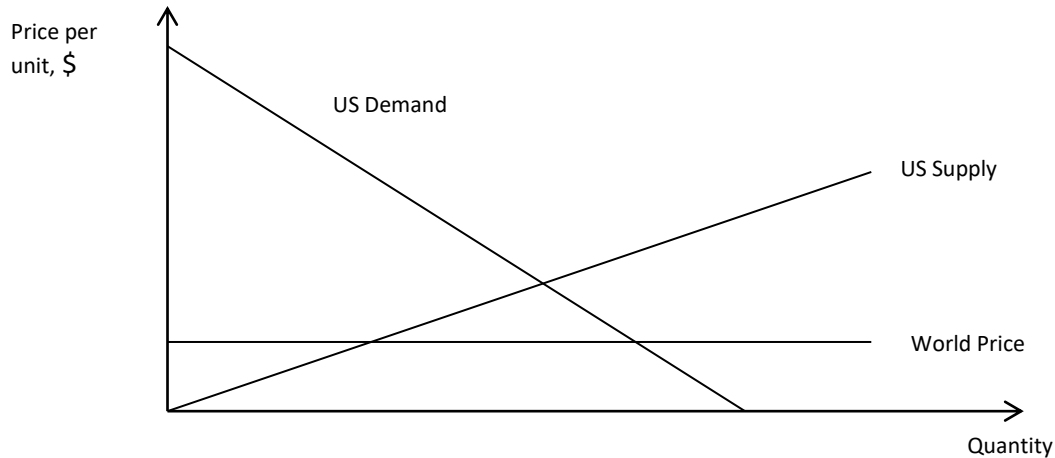
Academic integrity is the cornerstone of the Department's rules for student conduct and evaluation of student learning. Students accused of academic misconduct will be referred directly to the Office of Community Standards and Student Conduct for disciplinary action pursuant to the Student Conduct Code and, if found guilty, will be subject to sanctions. Sanctions range from a disciplinary warning, to academic probation, to immediate dismissal for the Department and the University, depending on the seriousness of the misconduct. Dismissal can be, and has been, applied even for first offenses. Moreover, a grade of zero can be assigned by the instructor for the course.

1. (25 points) The U.S. domestic market for digital watches is perfectly competitive and shown on the graph below. The domestic supply and demand are given by:

$$Q_d = 1200 - 30P$$

$$Q_s = 20P$$

The world price for digital watches is \$15. You may find it helpful, but it is not required, to draw the quantities you calculate for parts a-d on the graph below (not to scale).

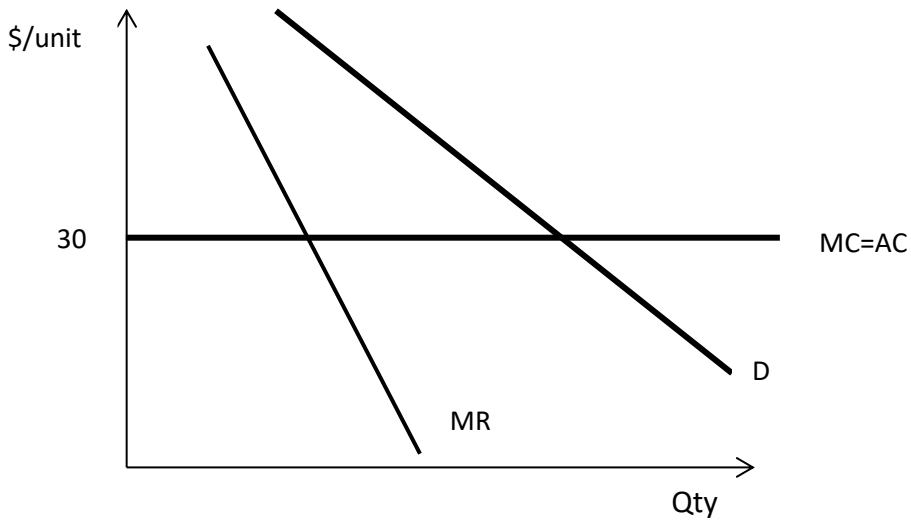


- a. (7 points) Find the number of watches imported under free trade in this market. What is the consumer surplus from free trade?
- b. (7 points) If the US passes a law completely eliminating trade in digital watches (quota=0), find the gains in producer surplus from this policy.

- c. (6 points) What is the deadweight loss under b?
- d. (5 points) If, in general, domestic watch firms make negative profits in the short run due to the opening of the market to trade (because prices fall), would you expect US watch imports to increase or decrease as the US market settles into long run equilibrium? Why? Assume that the change in imports won't affect the world price and use a diagram or a clear economic explanation (or both).

2. (25 points) Seattle Eco Car holds a patent for a solar powered car, making it a monopoly producer of this product. Market demand is found from $P=150-2Q$, while marginal revenue is $MR=150-4Q$. Marginal cost = Average cost = 30 and total cost = $30Q$.

(Use of graph is optional.)



a. (7 points) What is the output (Q) that maximizes profit and what is the price (P) charged?

b. (7 points) What is Eco Car's profit at the output and price from a?

c. (6 points) What would the market price and quantity be if the market transformed into a perfectly competitive market in the long run? State the rule you used to find this answer.

d. (5 points) Calculate the deadweight loss of the monopoly.

3. (25 points) Answer the following questions about externalities.

a.(6 points) If people took external costs like pollution into consideration, would they consume more or less of the goods that carry external costs? Is there such a thing as an optimal amount of pollution? Explain.

The demand for flu shots (marginal private benefit) is given by $P=10-0.01Q$. The supply (marginal private cost) is given by $P=0.02Q-5$. There is a \$3 positive externality on flu shots, making the marginal social benefit $MSB=13-0.01Q$.



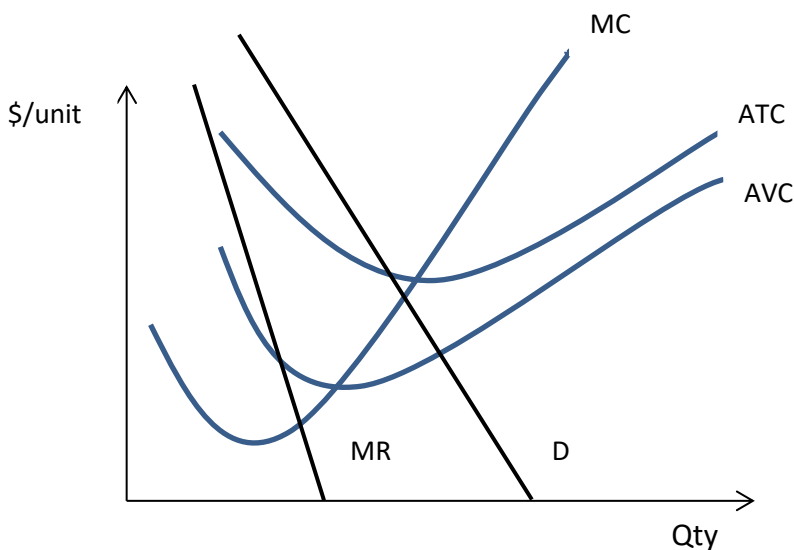
- b. (7 points) Find the private equilibrium price and output in this market. Draw the MPC and MPB on the graph above, along with this equilibrium.

- c. (7 points) Find the socially efficient price and output in this market. Draw this outcome on the graph, along with the MSB.

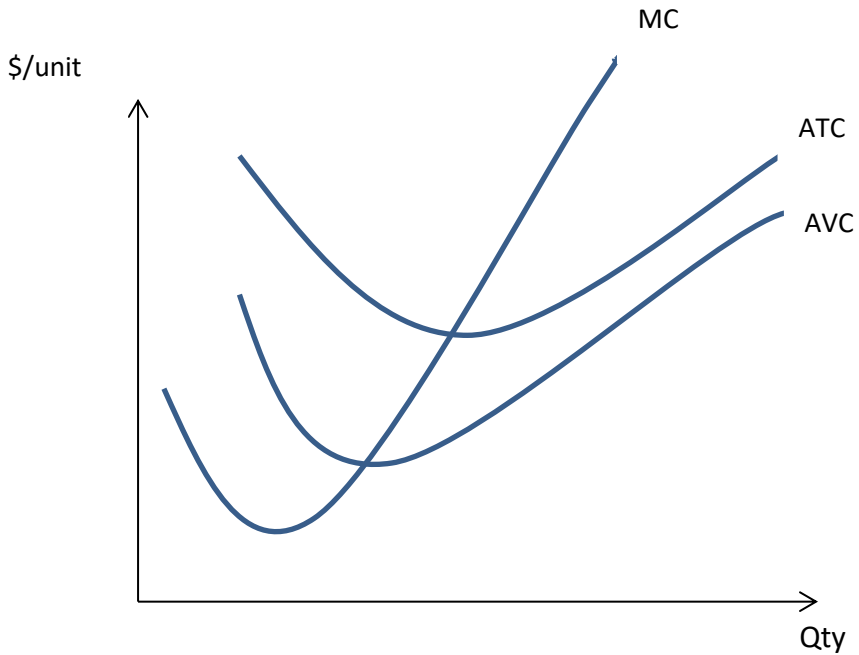
- d. (5 points) Find the deadweight loss in this market. Draw it on the graph and calculate it.

4. (30 points) Answer the following questions about monopolistic competition and oligopolies.

- a. (5 points) The figure below shows short-run cost curves, demand, and marginal revenue for a firm in a monopolistically competitive market. Indicate the firm's profit maximizing output and identify the firm's profit by drawing it on the figure.



- b. (10 points) Draw what happens in the long run to the monopolistically competitive market from part b and explain why that is happening with words. (hint: Draw long run D, MR, Q and P and explain why you drew them that way.)



- c. (6 points) Why is the outcome in b not allocatively or productively efficient? Briefly define allocative and productive efficiency as part of your answer.

- d. (4 points) What can the firm in part b do to increase their profits. Will that increase or decrease the deadweight loss in the market? Why?
- e. (5 points) Now, think about oligopolies. Explain, in 2 or 3 sentences, why firms in an oligopoly market care about the output chosen by other firms. If it helps, you can explicitly consider the difference between oligopolies and perfectly competitive firms in this regard.

5. (20 points) Answer the following questions about economic production and costs.
- a. (4 points) Mike wants to open his own repair shop, and is considering using his savings of \$30,000 to get it started. He is currently earning 3 percent interest on his savings. His friend Bob calls him and asks to borrow \$30,000 to start up a bagel shop; Bob offers to pay him 5 percent interest if he loans him the money. If Mike were to use the money to open his own repair shop instead, what is the cost of using his savings? Is this an implicit or explicit cost?
- b. (4 points) True or false, in constant returns to scale production, average total cost does not depend on the quantity of output. Explain.

- c. (6 points) Explain what “diminishing marginal product” means and why the marginal product of labor diminishes in the short run. Why doesn’t it (necessarily) diminish in the long run?

- d. (6 points) Explain “minimum efficient scale” in terms of long run firm costs. Is a market productively efficient in the long run if all firms are operating at minimum efficient scale?

SCRATCH PAPER

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