

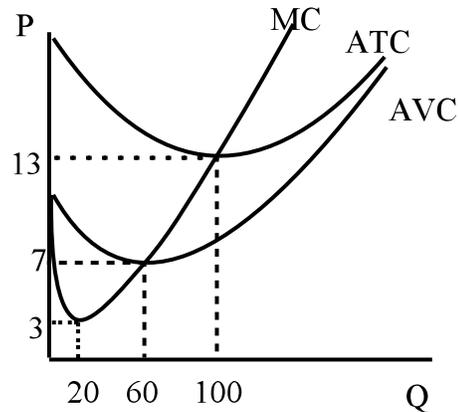
Write your name on the cover of the test booklet and nowhere else. Enclose this sheet with the booklet. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 170 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 16-point question should take 8 minutes. Because of the class that follows your class, I cannot give you extra time.

1) (10 points) Answer EITHER Part A OR Part B.

- A) Why is  $MR = MC$  profit maximizing for all firms. (Except in Bertrand, because  $MR$  is technically not defined.)
- B) Would you consider the automobile industry to be perfectly competitive, monopolistically competitive, oligopoly, or monopoly? Explain your logic.

2) (14 points) Answer EITHER Part A OR Part B.

- A) If there are 200 firms in a perfectly competitive industry and their cost curves are drawn to the right, then draw the industry short-run supply curve. Explain how you got the different points on the graph.
- B) Is the industry output in a Cournot Duopoly greater than, equal to, or less than the monopoly output? Explain your logic. Is the industry output in a Cournot Duopoly greater than, equal to, or less than the perfectly competitive industry output? Explain your logic.



3) (16 points) Answer EITHER Part A OR Part B.

- A) Suppose that there are two firms with 20% of the market each and six firms with 10% of the market each. Calculate the Herfindahl-Hirschman Index (HHI) for this industry. What would the index be if the two smallest firms merged? Show all work. The *Department of Justice's* general guidelines for allowing a merger are to allow it if the post-merger HHI is below 1000, or if the post-merger HHI is between 1000 and 2000 and the change in index is  $<100$ , or if the post-merger HHI is over 2000 and the change in the index is  $<50$ . Should this merger be allowed? Explain your logic.
- B) Find the CR4, CR8, and Herfindahl-Hirschman Index (HHI) for the two industries below. All of the numbers are percentage of sales. Show all work. Given your results, which measure of concentration CR4, CR8, or HHI do you feel is the best for measuring how much market power is in the industry? Explain your logic.

	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5	Firm 6	Firm 7
Industry A	20	20	20	20	20	0	0
Industry B	40	10	10	10	10	10	10

4) (18 points) Answer EITHER Part A OR Part B.

- A) Draw an ATC/AVC/MC/D/MR diagram for a monopoly. On it, show the consumer surplus, producer surplus, and deadweight loss. Explain how you found each area.
- B) Draw an ATC/AVC/MC/D/MR diagram for a monopoly. On it, show the total revenue, total cost, and total profits. Explain how you got each area.

5) (18 points) Answer EITHER Part A OR Part B.

- A) Derive firm 1's best response function for a Cournot Duopolist where the industry demand is described by  $P = 124 - \frac{1}{2}Q_1$  and the marginal costs are constant at  $MC = 4$ . Make sure you explain why you drew the firm's demand and marginal revenue curves as you did and explain how you got the equation.
- B) Suppose a Cournot Duopolist has a best response function of  $Q_1 = 40 - \frac{1}{2}Q_2$ . Draw both firm's best response functions. Explain how you got each line, and give the economic interpretation of the four intercepts.

6) (24 points) Answer EITHER Part A OR Part B.

- A) Draw the SRATC/LRATC/SRMC/LRMC/D/MR diagram for a monopoly that is in its long-run equilibrium in the downward sloping part of the LRATC curve. Explain how you know that the firm is in both its long and short-run equilibria.
- B) Draw the ATC/AVC/MC/D/MR diagram for a **monopolistically competitive** firm that is losing money. State how you know the quantity it is producing at and how you can tell it is losing money. Illustrate the movements over the long-run of the curve(s). Explain why the curve(s) moved as drawn.