

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 10-point question should take 5 minutes. I cannot give extra time because some students have a class after your class.

1) (16 points) Answer EITHER Part A OR Part B.

- A) Explain why $P = MR$ for perfect competition, but $P > MR$ for all other firms.
 B) Explain why the LRATC curve is the envelope of the SRATC curves but the LRMC curve is not the envelope of the SRMC curves.

2) (16 points) Answer EITHER Part A OR Part B.

- A) The Department of Justice (DOJ) generally does allow mergers if the post-merger HHI is <1000 , or if the post-merger HHI is between 1000 and 1800 and the change in the HHI is <100 , or if the post-merger HHI is >1800 and the change is <50 . Would the DOJ be likely to approve a merger between firms 3 and 4? Show all work and briefly explain what you did.

Firm	1	2	3	4	5	6
Sales	100	100	100	300	600	800

- B) Calculate the CR4, CR6, and CR8 for the industry above. Show all work.

3) (18 points) Answer EITHER Part A OR Part B.

- A) Draw a diagram which proves that monopolies do not have supply curves. Explain how the diagram proves it.
 B) Draw the diagram for a firm facing a kinked demand curve. You do NOT need to explain why it takes its shape. However, derive the marginal revenue curve and use it to figure out why they may not change their price when the costs of production change. Explain how you got the marginal revenue curve and why they may not change their output.

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

- A) Draw the ATC/AVC/MC/D for a monopoly which is making profits. Show on the diagram, the price charged, quantity produced, and profits. Explain how you found them. How do you know that what you labeled as profits is really profits.
 B) Draw the ATC/AVC/MC/D for a monopolistically competitive firm which is making profits. Illustrate what happens over time. Explain why the curve(s) moved as drawn. Find the price charged and quantity produced before and after the curve(s) moved.

5) (32 points) Answer EITHER Part A OR Part B.

- A) Suppose a Cournot duopoly has the marginal costs of \$2/unit. The demand curve for the industry is given by $P = 20 - (Q/10)$. Draw the demand curve for the industry and use it to derive the demand curve for a firm. Find its best response function. Draw the two best response functions and determine how much each firm will produce and the price they will charge.
 B) Draw the ATC/AVC/MC/D/MR diagram for a perfectly competitive firm which is losing money, but staying in business. Beside it, draw a supply and demand diagram for the industry. Draw the movement(s) of the curves over time on both diagrams. Explain why the curve(s) moved as drawn.