

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 150 points and is scheduled to take 75 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 16-point question should take 8 minutes. I will give a few extra minutes, but probably no later than about 5 or 10 minutes after the hour.

1) (16 points) Do EITHER part A OR part B.

A) Draw the D/MR/ATC/MC diagram for a monopolistically competitive firm that is in its long-run equilibrium. Find the profit maximizing quantity and price. Explain how you got them.

B) Draw the D/MR/ATC/MC diagram for a natural monopoly. Use the diagram to explain why it is called a natural monopoly.

2) (16 points) Do EITHER part A OR part B.

A) Prove that monopolies do not have supply curves and explain the economic reason for that.

B) Draw the D/MR/MC/ATC diagram for a monopoly. Find the dead-weight loss and explain how you found it.

3) (18 points) Do EITHER part A OR part B.

A) Suppose that a firm is deciding whether or not to enter a market. If they do not, then the incumbent gets profits of \$100. If there is entry, then the incumbent can choose to keep her high price or to lower her price. If she keeps the high price, then the incumbent gets profits of \$0 and the entrant gets profits of \$75. If the incumbent lowers her price, then they both get losses of \$10. Write the decision tree (a.k.a. extensive form) and explain how you got it. Find the equilibrium and explain how you chose it.

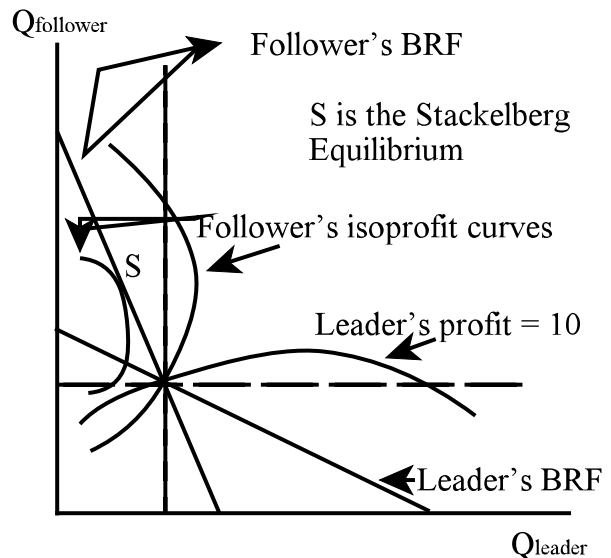
B) Suppose the following is true. If you charge a high price and your competitor charges a high price, both of you make profits of \$100. If you cheat one time, your profits are \$300, but you will make only \$50 from then on because of the trigger strategy. What interest rate will result in your indifference in choosing between cheating and cooperating? Show all work and explain how you got it.

4) (20 points) Do EITHER part A OR part B.

A) Draw the D/MR/MC diagram for a monopoly in a contestable market. Find the equilibrium level of output and price. Explain how you got them. Explain why the demand and marginal revenue curves look as drawn.

B) Draw the D/MR/MC diagram for the Sweezy model of oligopoly. Find the equilibrium level of output and price. Explain how you got them. Explain why the demand and marginal revenue curves look as drawn.

5) (24 points) The diagram to the right is supposed to illustrate the Stackelberg equilibrium. It has at least 5 errors. Find at least THREE errors. Explain how you know they are errors.



6) (28 points) Suppose that a Cournot-Nash duopoly is facing the demand curve $P = 98 - 2(Q_1 + Q_2)$. The total cost for firm 1 is $TC = 5 + 2Q_1 + Q_1^2$. Firm 2's TC function is the same but with "2" subscripts instead of "1". Find firm 1's total revenue, marginal revenue, and

