Econ 3324 Spring 2011

Managerial Economics R. Claycombe

First Exam

Write all answers in your blue book and show all work there. Return your exam in your blue book.

30 pts.

1) Suppose $P = 20 - .1Q$ and $TC = 100 + 10Q - .4Q^2 + .01Q^3$

a) Find the profit maximizing P, Q, TR, TC and π (Profit)

Now suppose that $P = 20 - Q^{1/2}$ and TC is fixed at 200.

b) Find the profit maximizing P, Q, TR, TC and π now.

c) Carefully sketch the MR and MC curves for parts a and b in one diagram.

20 pts.

2) a) If $P = 20 - .1Q$, what is the elasticity of demand when $Q = 100$?

b) Use this elasticity to say how much Q will change if price increases by 1 percent at this point.

c) Use this elasticity to get a value for MR at this point.

d) With this demand curve, what happens to elasticity if Q increases? Why?

e) If $\ln Q = 20 - .1\ln P$, what happens to elasticity if P increases? Why?

10 pts.

3) Suppose that $e = 3$ and that the "gross profit margin" (total revenue minus variable cost over total revenue) is 50 percent. What could be done to increase profit? Why?

15 pts

4) Draw a well-labeled diagram to show an increase in demand and a constant level of MC and given what you draw, say what happens to elasticity and the profit maximizing price.

25 pts.

5) a) If there are two segments of our market, A and B, and $Q_A = 100 - 10P$ and $Q_B = 200 - 40P$ and $MC = 2$, find the profit maximizing prices and quantities.

b) Draw a well-diagram that shows the profit maximizing prices and quantities except now that $MC = 2 + .01Q$.

c) Change part b so that one segment of the market is not served.

I have neither given nor received unfair aid on this test nor am I aware of anyone else who has.

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