

First Exam

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

17 pts.

- 1) a) Draw a well-labeled diagram that shows a profit maximizing P and Q.
- b) Briefly justify the shapes and slopes that you gave your curves in the diagram.
- c) Now use the part a diagram to identify the TR maximizing Q and describe the problem that we worked where maximizing TR was a plausible goal.

12 pts

- 2) $Q_D = 100 - 3P$ and $TC = 500 + Q + .01Q^2$ Find the profit maximizing P and Q.

20pts.

- 3) $\ln Q = 100 - 3 \ln P$

- a) What is the price elasticity of demand.
- b) Use calculus to show this.
- c) If P is 10, what is MR?
- d) If $MC = 2$, what is the profit maximizing P?

17 pts.

- 4) If $P = 80 - 10 Q^{1/2}$ and $TC = 100 \ln(Q+1)$

- a) Find equations for MR and MC.
- b) Use the solver to find profit maximizing P & Q.

17 pts

- 5) a) If $P = 20$ and $MC = 10$ and $e = 3$ (or -3), do we have the profit maximizing price? Why?
- b) Draw a well-labeled diagram where we have an isoelastic demand increase and these figures before the increase.
- c) Does the demand increase in your diagram make 20 the profit maximizing price? Why?

17 pts.

- 6) Your choice: chose a type of price discrimination, say what it's called and draw a well-labeled diagram that shows how it provides more profit. Briefly describe an example of where this is or has been done.

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