Econ 3324   Spring 2016

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.

17 pts.

1) Suppose that demand could be high or low and that the probabilities are .5 each way. Our firm is considering a high price or a low one. Profit with high price is expected to be 100 if the demand is high and 50 if the demand is low. Profit with low price is expected to be 80 if the demand is high and 60 if the demand is low. Based on the expected values which price is best? If the firm also cares about risk, might it prefer the other price? Why? What MRS would make the firm indifferent between the two strategies?

16 pts

2) Suppose Profit = $10Q - Q^2$.   Find the profit maximizing Q. Show that this is a maximum.

16 pts.

3) Suppose $P = 20 - Q$. Use the product rule to find the Q that maximizes TR. (If you can't use the product rule, find it any way you can for part credit.

17 pts.

4) Suppose that AC = $10 + (10 - Q)^4$ (admittedly kind of strange, but designed to encourage use of the chain rule).

a) Use the chain rule to find the Q that minimizes AC.

b) Use the solver to find Q that minimizes AC.

17 pts
5) Suppose our demand function is Q = 100 -2P + 10A and we currently have A at 10.
a) Find the elasticity of demand if P and A = 10 and use it to say how much Q will change if P goes up by 10%.
b) Should price go up? Why?

17 pts.
6) Suppose lnQ = 10 – 3lnP,
a) Say as precisely as you can what will happen to Q if P goes up by 10%.
b) Use calculus to draw a rough sketch of the demand curve.

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

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