

Second Exam

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

18 pts.

- 1) Suppose that the price of X goes down.
 - a) Use an indifference curve diagram to show the effect on the demand for X.
 - b) Sketch the compensated demand curve in a vertically aligned diagram.
 - c) Show the income and substitution effects in your part a) diagram.

12 pts.

- 2) Mr. X has spent \$20000 on advertising at his company and he has already produced 20000 units of the product at a cost of \$40000. At the current level of demand, he expects to sell 10000 units at a price of \$4.
 - a) If he does nothing more does he expect to make a profit? Why?
 - b) Should he spend another \$20000 on advertising? What effect does it have to have for him to break even on the additional advertising? What effect does it have to have for him to break even on all his expenses? Is there any way his revenue can exceed his costs?

20 pts.

- 3) Suppose that $Q = L^{1/2}K$,
 - a) If initially $L = 9$ and $K = 10$, find MP_K .
 - b) If initially $L = 9$ and $K = 10$, find the MRTS.
 - c) If initially $L = 9$ and $K = 10$ and $P_L = 1$ and $P_K = 2$, is cost minimized? Why? If not, should L and K be more equal or less? Why? (Find the tangency line)
 - d) Are the returns to scale here increasing, decreasing or constant? Explain.

18 pts.

- 4) Use a two frame well-labeled diagram to show the effect of an increase in fixed cost on price and quantity in the long run and the short run in an increasing cost industry.

18 pts.

- 5) a) Use a well-labeled diagram to show the dead weight loss created by a typical price floor.
b) What happens to the surplus created by the typical price floor.

14 Pts.

6. If $Q = L^2K^2$
 - a) Find the partial derivatives of L and K.
 - b) Write the total differential equation.
 - c) If $U = 10 - (30 - 4X)^2$, find dU/dX and the value of X that maximizes U.

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