

Second Exam

Write all answers in your blue book and show all work there. Return your exam and printout(s) in your blue book.

20 pts.

1) The X Corp. makes two products, A and B. Accounting records provide the following information.

	A	B
Q	1000	1000
Direct Labor	\$2000	\$3000
Materials	\$1000	\$1500
Power	\$100	\$150
Overhead	\$2000	\$3000

Overhead is allocated by formula, but the best judgment is that 30 percent of overhead allocated to A actually varies with A and that 40 percent of overhead allocated to B actually varies with B. A is currently selling for 5 dollars per unit and B is selling for 8 dollars per unit, but a large order (100 units) has come in for A, if the price is discounted to 4 dollars. The firm is near capacity now, requiring that production of B must be reduced by 50 units in order to fill the order for 100 units of A.

- a) Should the firm take or leave the order for A? Explain.
- b) Perhaps the firm has more options than suggested above. Suggest one.

20 pts.

2)		(1000's)	(1000's)
	Month	Q	TVC
	J	10	60
	F	9	53
	M	10.5	64
	A	11	67
	M	10.1	66
	J	10.6	65

- a) If the current price is 9 dollars and the elasticity of demand is 2, is profit maximized? (Use the computer if you wish.) Explain.

- b) Suppose that in April the wage rate of workers went up. How would you deal with this change in your cost analysis?
- c) Suppose that in April new cost saving technology was put into use. How would you deal with this change in your cost analysis?

20 pts.

- 3) a) Sketch the general shape of the SRMC when $Q = \min(L/4, M/3, K/2)$, $K = 20000$ and L and M are unlimited.
- b) Sketch the general shape of the LRAC when $Q = 10L^{.3}M^{.3}K^{.3}$.

20 pts

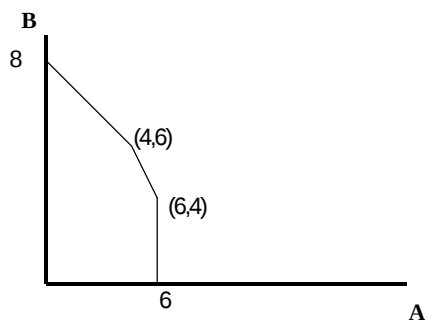
- 4) The X firm currently charges 10 dollars for its product and has 2 competitors that cooperate closely with price increases and that equally share the market. They all sell 500,000 units per month and have $FC = \$2,000,000$ and $VC = \$1,000,000$ per month. The market price elasticity is 1.
- a) Can the firms expect the current price to discourage the entry of an equally large and efficient firm? Explain.
- b) Can the current price be the short run profit maximizing one? Why?

10 pts.

- 5) When forecasting, why is it preferable to have a model where $Q_D = f(P, P_{Sub}, I, \text{etc.})$ rather than one where $Q_D = f(\text{time})$?

10 pts.

- 6) Suppose that a linear programming model gives you the diagram below and $\text{Profit} = 4A + 3B$. Find the profit maximizing point and compare the slope of the isoprofit line to the slopes of the constraints at that point.



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