

Second Exam

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

16 pts.

1) At Steady Grow Inc. the following demand function has been estimated.

$$QD = 10000 + 100t \quad R^2 = .90$$

where t is time in months. a) According to the equation, how much do you expect sales to increase each month? Is there cause to say that this is a reliable estimate? Why?

b) Can you think of another specification for the equation that might be better? Explain.

25 pts.

2) Engineers at ABC Corp. estimate that $Q = L^{0.2}M^{.03}P^{0.4}$

a) Find MP_L when $L = 10$, $M = 20$ and $P = 30$.

b) Other factors constant, how much will quantity increase (in %) when M increases by 10%.

c) Are the returns to scale increasing, constant or decreasing? Explain.

14 pts.

3) The table below shows output for a limited set of resource combinations.

	L	
K \	1	2
1	50	80
2	70	140

a) If $P_K = 50$ and $P_L = 20$, find AC at each quantity for each plant size and sketch crude AC functions.

b) From your AC diagram, which plant seems to have lower cost at low quantities? From your AC diagram, which plant seems to have lower cost at high quantities? Be sure to consider the issue of diminishing returns in your answer.

20 pts.

4) This month we sold 10000 units of our product at a price of 1 dollar (per unit). The elasticity of demand is believed to be 2. Our costs this month and last are given below.

	This Month	Last Month
Q	10000	9000
Dir Lab	\$3000	\$2600
Mat.	\$2000	\$1700
Overhead	\$4000	\$3000

a) Sketch a linear demand curve based on the available information.

b) Sketch AVC and MC curves, based on the available information. Put it in the part a diagram.

c) Does the \$1 price appear to be the profit maximizing price? Explain.

d) Suppose that the factor prices inflated between this month and last. How does this affect the calculations?

25 pts.

5) Your firm regularly sells product A for \$10, but has been offered \$9 by the XYZ Corp. They want 10000 units by the month's end. You could produce this quantity, but only by reducing sales of your other product, B, by 5000 units. The following information on costs are available.

	Product A	Product B
Direct Labor (per unit)	\$5	\$7
Materials (per unit)	\$3	\$4
Allocated Overhead	\$1	\$2
Regular Price	\$10	\$15

Should you take or leave the offer? Why?

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