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

14 pts.
1) a) Briefly describe the primary advantage and disadvantage of using consumer survey data to estimate demand.
b) Briefly describe an econometric concern that we have when using historic data to estimate demand.

14 pts.
2) Suppose that you have the following print out for a demand function.

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>490897.9</td>
<td>4472748</td>
<td>0.109753</td>
</tr>
<tr>
<td>Income</td>
<td>5319.469</td>
<td>62803.76</td>
<td>0.0847</td>
</tr>
<tr>
<td>Price</td>
<td>-10.56</td>
<td>1.146313</td>
<td>9.215296</td>
</tr>
<tr>
<td>Competitors' Advertising</td>
<td>5.77714</td>
<td>1.865195</td>
<td>3.09734</td>
</tr>
<tr>
<td>Competitors' Price</td>
<td>134560.8</td>
<td>60536.47</td>
<td>2.222806</td>
</tr>
</tbody>
</table>

a) Which, if any, of these variables are insignificant at the one percent level?
b) Which variable has an unexpected sign to its slope? What can cause this?

20 pts.
3) If our production function is $Q = 100L^{0.5}K^{4}$
a) Describe the returns to scale.
b) Use a spreadsheet to find the cost minimizing factor combination when $P_L = 10$ and $P_K = 5$ and $Q = 1000$. Hand in the spreadsheet.
c) Draw an isoquant/isocost diagram that illustrates what you found in part b.

20 pts.
4) a) Write the equations for 3 cost functions with reasonable but different shapes.
b) Will you likely have cross section or time series data to work with? Why?
c) How do changing technology and factor prices and multiproduct production complicate cost estimation?
14 pts.
5) Resketch this diagram and add what’s needed to show the transfer price of component A, if there is one unit of A per unit of the final product B.

P

\[ Q \]

MC

A&B

D

14 pts.
5) A perfectly competitive market has demand of \( Q_D = 1800 - 10P \) and the firms have \( TC = 20 + 15Q + .5Q^2 \)
a) If there 100 firms, what are the equilibrium price and firm quantity.
b) Is this a long run equilibrium? Why? If not, what happens? (Don’t solve, just say generally.)

20 pts.
6) A monopolist has demand of \( Q = 320 - 10P \) at present. \( TC = 30Q \).
a) Find the profit maximizing price and the profit.
b) Suppose that if this profit and price are chosen that after three years entry occurs and demand falls so that profit in the following years is down by 20 percent. What additional information do you need to have to find the present value of this profit stream.
c) Now suppose that entry can be prevented by charging a price that is ten percent below the part a one. Is it possible that this strategy could have a higher present value than we would find in part b. Explain.

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