Class 14: Non-Competitive Price Setting Exercises

In today’s class, students will solve problems to help them improve their understanding of how decision makers with market power use marginal cost and marginal revenue to make production and pricing decisions.

1. The city of New Orleans has 200 advertising companies, 199 of which employ designers of normal ability at a salary of $100,000 a year. Paying this salary, each of the 199 firms makes a normal profit on $500,000 in revenue. However, the 200th company employs Janus Jacobs, an unusually talented designer. This company collects $1,000,000 in revenues because of Jacobs's talent.
   a. How much will Jacobs earn? What proportion of his annual salary will be economic rent?
   b. Why won't the advertising company for which Jacobs works be able to earn an economic profit?

2. Unskilled workers in a poor cotton-growing region must choose between working in a factory for $6,000 a year and being a tenant cotton farmer. One farmer can work a 120-acre farm which rents for $10,000 a year. Such farms yield $20,000 worth of cotton each year. The total non labor cost of producing and marketing the cotton is $4,000 a year. A local politician whose motto is "working people come first" has promised that if he is elected, his administration will fund a fertilizer, irrigation, and marketing scheme that will triple cotton yields on tenant farms at no charge to tenant farmers.
   a. If the market price of cotton would be unaffected by this policy and no new jobs would be created in the cotton-growing industry, how would the project affect the incomes of tenant farmers in the short run? In the long run?
   b. Who would reap the benefit of the scheme in the long run? How much would they gain each year?

3. A single-price, profit-maximizing monopolist:
   a. Causes excess demand, or shortages, by selling too few units of a good or service.
   b. Chooses the output level at which marginal revenue begins to increase.
   c. Always charges a price above the marginal cost of production.
   d. Also maximizes marginal revenue.
   e. None of the above statements is true.

4. If a monopolist could perfectly price-discriminate: (L02, LOS)
   a. The marginal revenue curve and the demand curve would coincide.
   b. The marginal revenue curve and the marginal cost curve would coincide.
   c. Every consumer would pay a different price.
   d. Marginal revenue would become negative at some output level.
   e. The resulting pattern of exchange would still be socially inefficient.

5. What is the socially desirable price for a natural monopoly to charge?
   a. What is meant by a natural monopoly?
   b. Why will a natural monopoly that attempts to charge the socially desirable price invariably suffer an economic loss?
6. TotsPoses, Inc., a profit-maximizing business, is the only photography business in town that specializes in portraits of small children. George, who owns and runs TotsPoses, expects to encounter an average of eight customers per day, each with a reservation price shown in the following table.

<table>
<thead>
<tr>
<th>Customer</th>
<th>($ per photo)</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>40</td>
</tr>
<tr>
<td>B</td>
<td>46</td>
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<tr>
<td>C</td>
<td>42</td>
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<td>D</td>
<td>38</td>
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<td>F</td>
<td>30</td>
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<td>G</td>
<td>26</td>
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<tr>
<td>H</td>
<td>22</td>
</tr>
</tbody>
</table>

a. If the total cost of each photo portrait is $12, how much should George charge if he must charge a single price to all customers? At this price, how many portraits will George produce each day? What will be his economic profit?
b. How much consumer surplus is generated each day at this price?
c. What is the socially efficient number of portraits?
d. Suppose alternatively that George knows the reservation price of each of his customers and is allowed to charge any price he likes to any customer. How many portraits will he produce, what will he charge for them, and how much profit will he make?
e. Is the allocation of portraits that you arrived at in part d efficient (Pareto Optimal)?

7. Serena is a single-price, profit-maximizing monopolist in the sale of her own patented perfume, whose demand and marginal cost curves are as shown. Relative to the consumer surplus that would result at the socially optimal quantity and price, how much consumer surplus is lost from her selling at the monopolist's profit-maximizing quantity and price?