Econ 301 Intermediate Microeconomics
Problem Set 6
Due Wednesday, August 6 BY 5PM

Answer all questions on a separate sheet of paper. For questions involving math, show your work. Each part of a question is worth 2 points.

1. Page 301 of the textbook, problem 3.

2. Suppose that the identical firms in a perfectly competitive market for cakes have long-run total cost functions given by $TC(Q) = 10Q^3 + 60Q^2 + 100Q$. Total cost is independent of the number of firms and total output in the market.
   
   (a) Describe the long-run supply curve for this industry.
   
   (b) Suppose market demand is $Q_D = 1,000 - 0.4P$. Solve for the long-run competitive equilibrium price, output per firm, and number of firms in the market.
   
   (c) Suppose demand decreases to $Q_D = 800 - 0.4P$. Solve for the long-run competitive equilibrium price, output per firm, and number of firms in the market.

3. Page 341 in the textbook, problem 7. In addition, answer the following questions.
   
   (a) At a price of $60, what is Hack’s producer surplus? Hack’s profits?


5. Page 393, problem 5.

6. Page 393, problem 3. In addition, answer the following questions.
   
   (a) Find American Borax’s producer surplus given that they are a monopoly.
   
   (b) Find the consumer surplus given that American Borax is a monopoly.
   
   (c) (4 pts) Compute the deadweight loss due to American Borax being a monopoly. Hint: Suppose American Borax acted as a perfectly competitive firm. Find the equilibrium price and quantity, then find consumer and producer surplus under perfect competition. Use this to compute deadweight loss under monopoly.

7. For each of the following monopolies (or near monopolies), explain why you think they are a monopoly. In other words, what are the barriers that prevent other firms from entering the market? Second, explain how each monopolist could lose their monopoly. (Please write neatly or type your answers to this question. Thanks!)
   
   (a) Google search
   
   (b) Facebook
   
   (c) Your local power company
   
   (d) Your local water company