Econ 301  
Summer 2003  
Asinski

**Problem Set 1**  
**Due Monday June 2nd in class.**

Write your Name and last four digits of the middle nine of your University ID on your answer.

For each of the following three problems, carefully draw the graphs with supply and demand, denote initial equilibrium price/quantity(s), and then show what changes on the same graph:

1. (one point) Problem 4 (page 44) in the book.

2. (one point) Problem 7 (page 44) in the book.

3. (one point) Problem 12 (page 44) in the book. Do you think the current Federal minimum wage of $5.15/hour has any effect on the market of physician services?

4. (three points) Suppose the market for milk is characterized by the following Supply function 
   \[ QS(P) = 2P \]  
   and the Demand function 
   \[ QD(P) = 150 - P + 0.5PC \]  
   where \( P \) is the price of milk and \( PC \) is the price of ready-to-eat cereal.
   
   (a) Is cereal a substitute or a complement good for/to milk? Explain.
   (b) Solve for Equilibrium price and quantity as a function of \( PC \), i.e. just assume that \( PC \) is some known constant and proceed as usual by equating supply and demand.
   (c) Explain what happens when we plug in different values of \( PC \), i.e. which curve actually shifts and which doesn’t? Are we moving along one of the curves? Show it on the graph and explain.

5. (two points) Consider the following Demand function \( Q=100/P \), for \( 0<P\leq\infty \).
   
   (a) Calculate the elasticities of demand for the following points: from \( P=1 \) to \( P=2 \); from \( P=20 \) to \( P=21 \); from \( P=70 \) to \( P=71 \); from \( P=200 \) to \( P=201 \).
   (b) Compare the values you got in all four cases. Did you get the result you expected?

6. (two points) Consider the following Inverse Demand Function: \( P = 100 - 3Q \). Find a point of unit elasticity on this demand curve. Find the points where elasticities are -3, -100.