ECO 601
Fall 2002
Problem Set #8

Due: Wednesday, November 13

1. Suppose $Q=L^{1/3}K^{1/3}E^{1/3}$.
   a) Given input prices w, v, and u, solve for the firm's total cost function, i.e., TC=C(Q,w,v,u).
   b) Graph the TC function for w=1, v=2, and u=3.
   c) Solve for the firm's marginal and average cost functions.

2. Nicholson 12.7.

3. TFUE: Let Q=f(K,L). A tax that increases the unit prices of both capital and labor by 30% will change the K/L ratio used by the firm.

4. TFUE: If the cost function is homogeneous of degree one in input prices, then the production function is homogeneous of degree one in input employments.

5. TFUE: If the production function is homothetic, then no factor can be inferior.

6. TFUE: During World War II the United States paid below-equilibrium wages to soldiers. It raised an army by conscription, i.e., a random lottery draft. The same system was used during the Civil War, except that those who were drafted could hire substitutes to take their place. In a society of individuals with different abilities, the efficiency loss would be the same in either case.

7. Nicholson 13.6.