Economics 150A - Labor Economics
Assignment #4 - Spring 2008

Question 1

Suppose there are two inputs in the production function – labor and capital – and that these two inputs are perfect substitutes. The existing technology permits one machine to do the work of three persons. The firm wants to produce 100 units of output. Suppose that the price of capital is $750 per machine per week and that the weekly salary of each worker is $300.

(a) Which combination of inputs should the firm use?
(b) Suppose that a worker's weekly salary is $225. Which combination of inputs should the firm use?
(c) What is the elasticity of labor demand as the wage falls from $300 to $225?

Question 2

In the land of Oz the labor demand and supply schedules are as follows:

$L^S = 1000 + 100w \quad and \quad L^D = 1900 - 200w$

(a) What are the equilibrium wage and employment levels?
(b) At the equilibrium point, is labor demand or labor supply more elastic?
(c) How many people will be unemployed if the government institutes a minimum wage of $5?

Question 3

Does an increase in the minimum wage always lead to an increase in unemployment? Prove your answer graphically.

Question 4

Chicken Hut faces a perfectly elastic demand for chicken dinners at the price of $6 per dinner. The Hut also faces an upward-sloping labor supply curve:

$$L = 20w - 120$$

where L is the number of workers hired each hour and w is the hourly wage rate. Thus, the Hut faces an upward-sloping marginal cost of labor curve given by:

$$MC_L = 6 + 0.1 \times L$$

Each hour of labor produces 5 dinners. The cost of each chicken dinner is $0 as the Hut receives two-day-old chickens from Hormel for free.

(a) How many workers should Chicken hut hire each hour in order to maximize profits?
(b) What wage will the Hut pay?