THIRD TEST. ECON 335, FALL 2014. NAME: _____

Answer in the space provided. Show correct work for full credit. Box your final answers.

1. Pay and productivity

a) Explain the major pros and cons for workers and firms of payment according to output as opposed to payment by the hour.

b) Give and explain two distinct reasons why a firm might be able to increase the productivity of its workers if it systematically underpays them early in their careers (relative to their productivity), and then systematically overpays them later on.

2. Unemployment

a) What is an 'efficiency wage'? Explain how efficiency wages might be used in situations where employers cannot perfectly monitor their employees. How might efficiency wages contribute to structural unemployment?

b) Explain two other possible causes of structural unemployment.

3. Monopsonists, unions, and efficient contracts. Suppose that $R(L) = 130L - \frac{1}{20}L^2$ and $C(L) = 10L + \frac{1}{40}L^2$ give the value of firms' revenue and workers' cost, respectively, as functions of the quantity of labor employed.

Case 3-1: Profit maximizing monopsonist firm.

a) Suppose that workers behave competitively, but firms unite into a monopsony that sets the wage so as to maximize its profit. Find the equilibrium wage (w), quantity of labor (L), firm surplus (π), and worker surplus (σ).

$w =$ _____ $L =$ _____ $\pi =$ _____ $\sigma =$ _____

Case 3-2: Surplus-maximizing union.

b) Suppose that firms behave competitively, but workers form a union that sets the wage so as to maximize worker surplus. Find the equilibrium wage (w) and quantity of labor (L).

$w =$ _____ $L =$ _____

Case 3-3: Bargaining between one union and one firm. Suppose that there is one monopolistic firm which aims to maximize profit, and one union that aims to maximize worker surplus.

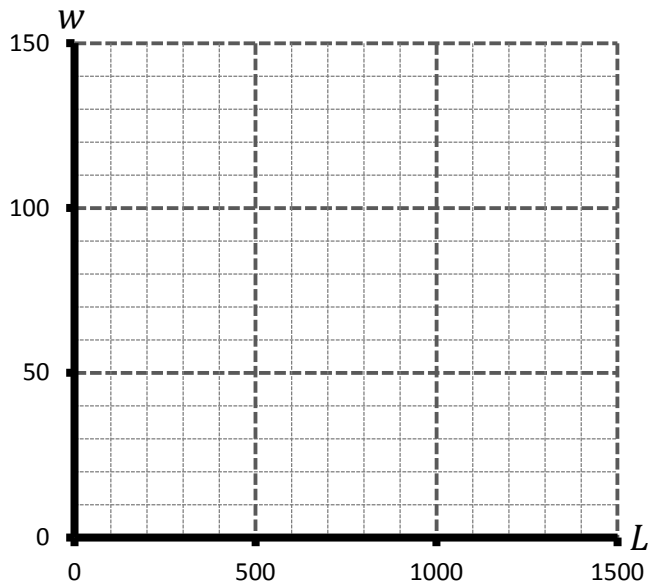
c) Find the firm's isoprofit function, expressing w as a function of L and π.

d) Find the union's isosurplus function, expressing w as a function of L and σ.

e) Find an equation in simplest form indicating that the isoprofit function and iso-surplus function have the same slope. Explain the intuition behind this equation.

f) What combination of L and w maximizes worker surplus subject to the constraint that firms get at least as much profit as they do in case 3-1?

g) On the graph to the right, draw the marginal revenue product of labor curve (MRP_L), the marginal cost of labor curve (MC_L), a few isoprofit curves, and a few isosurplus curves.



4. The life cycle and labor supply. Suppose that Carl's life can be divided into two distinct time periods, period 1 and period 2. Defining e_1 as leisure in period 1, e_2 as leisure in period 2, and c as total lifetime consumption, Carl's preferences can be represented by the utility function $U = {e_1}^2 e_2 c^3$. Suppose a simple budget constraint of $c = (1 - e_1)w_1 + (1 - e_2)w_2 + k$, where w_1 is Carl's wage rate in period 1, w_2 is Carl's wage rate in period 2, and k is Carl's non-labor income.

a) Find Carl's optimal c, e_1, and e_2 if $w_1 = 120$, $w_2 = 60$, and $k = 60$.

b) Find Carl's optimal c, e_1, and e_2 if $w_1 = 60$, $w_2 = 120$, and $k = 60$.

5. Gender, race, and the labor market.

a) The gender pay gap. On average, women in the US are paid substantially less than men, per hour. Name and carefully explain two ways in which this difference can be explained by factors *other than* direct discrimination. That is, discuss two ways in which the productive characteristics of women in the labor market are different on average from men, comment on the reasons for these differences, and explain how each of these reduces the wage that women receive.

b) Employer prejudice. Explain what is meant by an employer prejudice model of discrimination. Under what circumstances does it lead to lower pay for the disadvantaged group? Under what circumstances does it not affect the pay of the disadvantaged group?

c) Statistical discrimination. Explain what is meant by statistical discrimination, and how it differs from situations in which someone has a 'taste' for discrimination against some group. Give a concrete example of a case in which statistical discrimination might affect someone's pay.