1. Explain how prejudice in hiring decisions can destroy some of the gains from diversity in the preferences and abilities of workers. Build a simple model to illustrate.

2. Suppose a worker chooses consumption, $C$, and leisure, $\ell$, to maximize the utility function

$$U(C, \ell) = \alpha \left( \frac{(C - \gamma)^\rho - 1}{\rho} \right) + \left( \frac{(\ell - \gamma_0)^\rho_0 - 1}{\rho_0} \right)$$

subject to the budget constraint $C = w(T - \ell) + \mu$, where $T$ is the time endowment, $w$ is the real wage and $\mu$ is real nonlabor income.

(a) For which wages does the worker supply positive hours?

(b) Suppose $\rho = 0$. Derive the Marshallian labor supply curve (the supply price of labor as a function of hours worked).

(c) Suppose (instead) that $\rho = -2$, with $\rho_0 = \frac{1}{2}$, $\alpha = 6$, $\gamma_0 = 96$, $T = 168, \mu = 0$ and $\gamma = 50$. Plot the labor supply curve, and comment on whether it has any chance of fitting long-run trends in real wages and hours worked.

3. Retirement might be rationalized in a life-cycle model by assuming that productivity declines with age in later years. Alternatively, it might be explained by assuming that the disutility of working increases with age in later years. Do these two assumptions have different implications, or are they equivalent?

4. Suppose that there are 60 million people in the labor force in Mexico and 120 million in the U.S. All workers prefer to work in their own country, but the extent of this preference varies across people, and it is uniformly distributed between 0 and 12, so that if the wage difference is above 12 everyone would choose to work in the country with the higher wage (and if the wage difference is 8, two-thirds of the workers in the low-wage country would move to the high-wage country, and so on). The hourly marginal product of labor in each country is given by

$$MPL_{US} = 24 - \frac{1}{10} E_{US}$$

$$MPL_{MX} = 10 - \frac{1}{10} E_{MX}$$

where $E_{US}$ is the number of people working in the U.S. and $E_{MX}$ is the number of people working in Mexico (in millions). Assume that Mexican and U.S. workers are perfect substitutes (that is, they are equally productive when working in the same country), and assume that the same product is produced in both countries, and that the product price is 1.

(a) What are the market-clearing wages if immigration is not allowed?

(b) Now suppose that workers can freely migrate from one country to the other. How many people will migrate, and what will happen to wages in each country?

(c) What happens to output in each country when immigration is allowed? What happens to total output (the sum of the outputs in the two countries)?

(d) Discuss the welfare implications of your result.
5. In Ben-Porath’s model of optimal human capital accumulation, each person is born with some level of human capital, and this is augmented by producing additional human capital. There is generally an interval at the beginning of the life-cycle during which earnings are zero. How does the length of this interval vary with the initial level of human capital? Illustrate, using specific functional forms and parameter values.