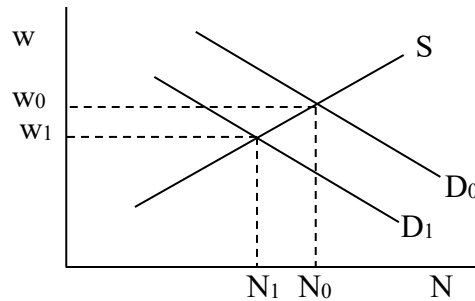**Practice Problem Set 2**
(ANSWERS)

1. If illegal aliens are complements to native workers and the proposed changes to the law are effective we would expect to see a reduction in the wages of native workers. This is because the reduction in illegal aliens would reduce the marginal productivity of native workers.

Diagram:

2. a. Assume that there are no migration costs. What is the average number of efficiency units among immigrants? Is the immigrant flow positively or negatively selected?
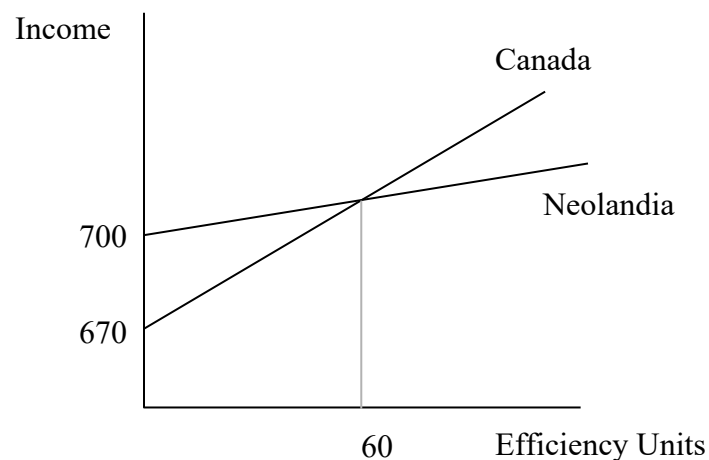
b. The earnings-skills relationship in each of the countries is illustrated in the figure. The Canadian line is steeper because the payoff to a unit of skills is higher in the Canada than in Neolandia. All workers who have at least 60 efficiency units will migrate to the Canada. Therefore, there is positive selection and the average number of efficiency unites in the immigrant flow is approximately 80 (the exact answer depends on whether the person with 60 efficiency units, who is indifferent between moving or not, moves to Canada).

c. Suppose that it costs $10 to migrate from Neolandia to Canada. What is the average number of efficiency units among immigrants? Is the immigrant flow positively or negatively selected?
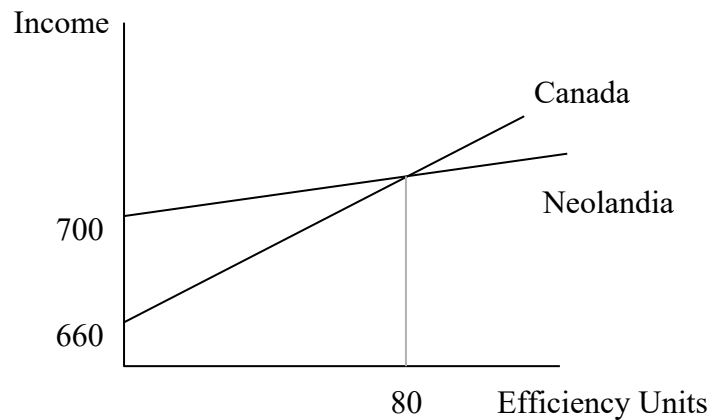
If everyone incurs a cost of $10 to migrate to Canada, the Canada wage-skill line drops by $10, and only those persons with more than 80 efficiency units will find it worthwhile to migrate. The immigrant flow is still positively selected and has, on average, 90 efficiency units.

d. What would happen to the selection that takes place if migration costs are not constant in the population, but are much higher for more skilled workers?

If migration costs are much higher for skilled workers it is possible that no skilled workers will find it worthwhile to migrate. We already know that even in the absence of migration costs no worker with fewer than 60 efficiency units will find it worthwhile to migrate. If highly skilled workers find it very costly to migrate it might be the case that there is no migration from Neolandia to Canada.

3.a "b" is the elasticity of labour supply with respect to the population, while beta is the elasticity of labour demand with respect to the population. The immediate effect of immigration activity is to increase the population. The magnitude of gamma depends on the net effect of immigrants arriving and natives departing on the population of region. In other words, one has to consider in migration and out migration.

b. By setting the S equation equal to the D equation and solving for e* and W* algebraically, one obtains the following expressions:

$$W^* = \frac{(a-\alpha)+P(b-\beta)}{\eta-c}$$

$$e^* = \frac{\eta a - \alpha c + (b\eta - c\beta)P}{\eta-c}$$

c. Differentiate the two equilibrium conditions with respect to the variable P in order to obtain the following expressions:

$$\frac{\partial W^*}{\partial P} = \frac{(b - \beta)}{\eta - c}$$

$$\frac{\partial e^*}{\partial P} = \frac{(b\eta - c\beta)}{\eta - c}$$

In case i), by substituting the numbers in, the values are - 1 / 0.4 = -2.5 for the wage elasticity, and -0.3 / -0.4 = 3 /4 for the employment elasticity. With this set of values, the immigration inflow has a negative (and highly elastic) effect on wages, but a positive and inelastic effect on employment. There is a strong supply shift (b = 1) and no offsetting demand shift at all (beta = 0).

In case ii), by substituting the numbers in, the values are 0 for the wage elasticity, and - 0.4 / -0.4 = 1 for the employment elasticity. With this set of values, the immigration inflow has no effect on wages, but a positive and unitary elastic effect on employment. There is a strong positive supply shift (b = 1) with a commensurate strong positive demand shift (beta = 1) that fully offsets the decline in the wage that was obtained for part i). Since both shifts are to the right, equilibrium employment must rise.

4. a) Competition ensures an equal present value of net advantage at the margin across occupations. However, this does not imply that wages will be the same across occupations.

Agree. Competition will ensure an equal present value of net advantage at the margin across all occupations. If this does not prevail, then competition ensures that workers at the margin of decision will move from jobs of low net advantage to ones of high net advantage. This allows for considerable variation in the occupational wage structure to reflect the main determinants of wage structures: the nonpecuniary aspects of the job; short-run adjustments; and noncompetitive forces. For example, occupations differ in their nonpecuniary characteristics, such as pleasantness, safety, responsibility, fringe benefits, seasonal or cyclical stability, and the certainty of their return. Occupational wage differentials may exist, therefore, to compensate for these nonpecuniary differences.

In addition, short-run adjustment factors, such as an increase in the demand for skilled workers due to technological change, would lead to short-term differences in net advantage across sectors and, in turn, in wages. For example, suppose there exists skilled and unskilled workers whose wages are different, reflecting compensating differentials (w_s vs. w_u). Suppose there is a technology change that increases the demand for skilled workers (D_s to D_s'). This shift in demand will increase skilled labour wages to w_s' if in the short-term supply is fairly inelastic. Despite this increase in w_s, the non-monetary characteristics of skilled and unskilled work will remain the same in addition to unskilled wages. This will increase the net advantage present in skilled occupations relative to unskilled work. In the long run the supply of skilled workers will

increase to S_s' as individuals move toward the higher net advantage. This adjustment of supply will lower wages back to their previous level. Again, however, in the long run, skilled and unskilled wages need not be equal given other compensating factors, however, net advantage will be.


Skilled Labour Market

Unskilled Labour Market
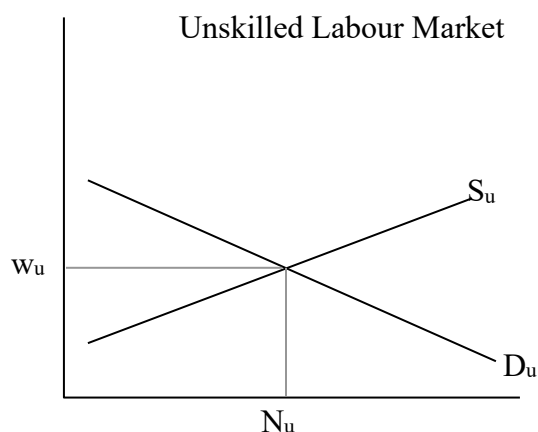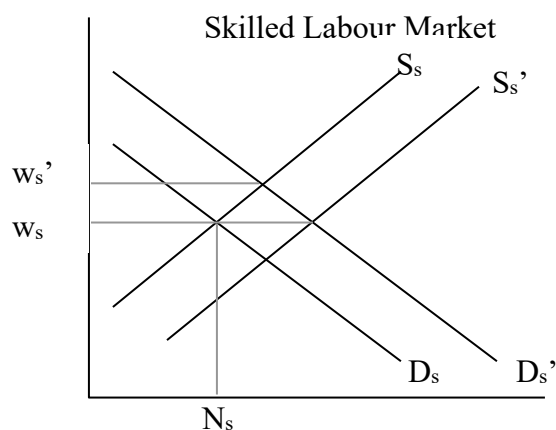
Finally, noncompetitive factors, such as occupational licensing, can effectively lead to a reduction in the supply of labour the hence artificially increase salaries.

b) An increase in the immigration of low-skilled workers has an unambiguously adverse impact on the wages of low-skilled native-born workers.

Example 1: This Answer Would Only Get You Part Marks

Disagree. It is possible that the introduction of new immigrants into the labour market will have an adverse impact. However, immigrants also purchase goods and services in the native country, and this will increase the derived demand for labour.
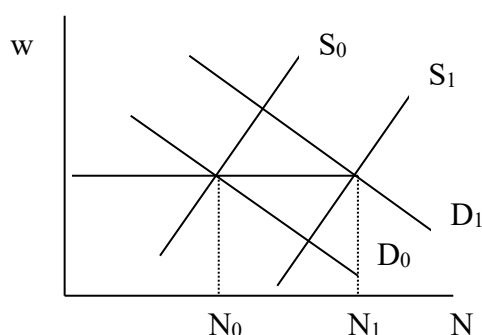

What's Missing? A complete discussion of the point that is being made and a complete description of the figure that is included. A more complete answer follows.

Example 2: This Answer Would Get You Full Marks

Disagree. It is possible that the introduction of new immigrants into the labour market will have an adverse impact. However, there are at least a couple of reasons why one might expect immigration to have a positive impact on native labour market outcomes. Whether the outcomes is positive or negative depends on whether immigrants are compliments or substitutes for native workers and, in the case where they are substitutes, the various possible offsetting factors.

If immigrants are perfect substitutes, immigration implies an increase in the supply of workers in the market for native labour (immigrants and natives have the same skills and compete for the same jobs). The outcome is illustrated below.

w | S_0 S_1

w_0

w_1 D_1

D_0

N_N N_0 N_1 N
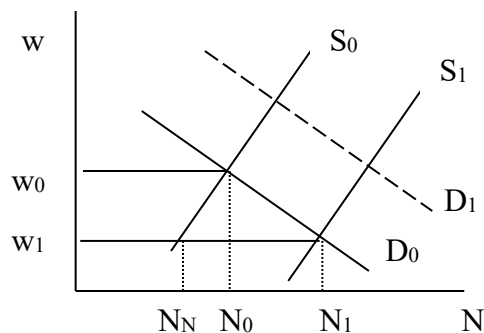
We are looking at the market for native workers here. The initial equilibrium prior to immigration is w_0, N_0. As a result of the increase in supply (from S_0 to S_1) total employment in this sector increases to N_1 and the wage falls to w_1. However, N_1 includes employment of both native workers and immigrants. As a result of the decrease in the wage, employment among natives falls to N_N. Thus, wages and employment among native workers falls.

However, immigrants also purchase goods and services in the native country, and this will increase the derived demand for labour. This can be illustrated by a shift up in the demand curve above from D_0 to D_1. If this is the case, the end result could be either positive or negative; depending on the relative shifts of the supply and demand curves, as well as the slopes (elasticity) of the functions.

If immigrants are perfect compliments, immigration increases the productivity of native workers and shifts up the labour demand curve for native workers (recall that the demand curve is just the marginal revenue product of labour curve). This outcome is illustrated below:

w | S_0

w_1

w_0 D_1

D_0

N_0 N_1 N
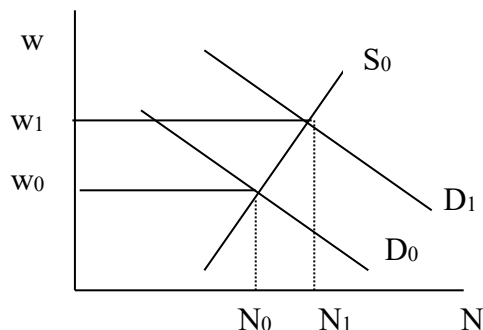
Again, here we are looking at the market for native workers. As the demand curve for native employment shifts up from D_0 to D_1 both the wage and level of employment of native workers increase. Thus, there are at least two cases in which immigration does not have an adverse impact.

The rest of the answers are "sketch solutions" intended to point you in the right direction.

c) The "entry effect" and "assimilation" profiles of recent male immigrants to Canada raise concerns about their ability to integrate into the Canadian labour market.

Agree. Recent empirical studies suggest that the entry effect is bigger for more recent immigrants and that the rate of assimilation is small. For example, Bloom et al. estimated that the rate of assimilation was 0.25% per year.

Implications of More Recent Studies
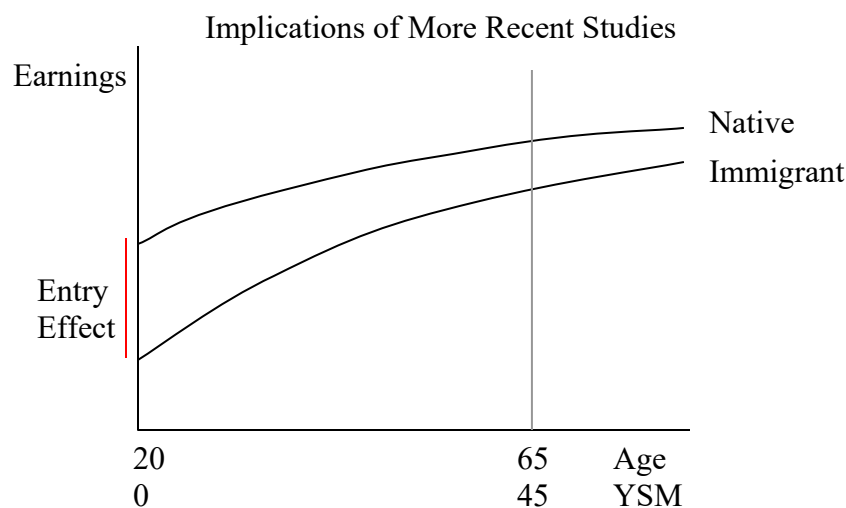
The entry effect is the earning differential between immigrants and similar natives upon arrival. This reflects the lack of Canada-specific skills. Assimilation is the rate at which the earnings of immigrants "catch up" to those of similar native workers. Early studies stated that immigrants do indeed catch up and surpass their native counterparts. More recent studies, however, suggest that recent immigrant cohorts perform poorly upon entry and have difficulty catching up. This indeed raises concerns with respect to the ability of current immigrants to integrate into the Canadian labour market.