*23d. Suppose 3 workers are hired at a wage of $6. Give an example of a mutually beneficial exchange that can still take place. Indicate the economic rent that is generated by your transaction.

23e. If workers earn economic rent, does that mean they are being overpaid?

*23f. Suppose all hiring in this market must be done through a union and the union has limited the supply of labor to 4 units. What wage will emerge in this market? How much economic rent have the employed members of the union gained? How much economic rent has been lost due to the limitation on union labor?

23g. Give an example of one thing that might cause labor demand to increase. Also give an example of one thing that might cause labor supply to decrease.

### Applications

#### An Imperfection in the Unemployment Rate

24. The unemployment rate is defined as the percentage of the labor force that is unemployed at any particular point in time.

24a. What happens to the unemployment rate when an unemployed worker drops out of the labor force?

24b. Suppose the worker would like to work but has dropped out of the labor force because jobs are very hard to find. Has the labor market become tighter or looser because of the worker’s withdrawal from the labor force?

#### Identifying the Demand and Supply Curves

25. Consider the following hypothetical scenario in which the president of a major labor union was presented with the data in Table 2-5. He concluded that the union was operating in a labor market where there was a rare upward sloping demand curve for union labor.

25a. Do you find his conclusion reasonable? What other conclusion could you draw?

25b. Using the demand and supply model, present an alternative explanation for the pattern shown in the data.

#### Table 2-5

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Wage of the Members</th>
<th>Member Employment (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>$10.00</td>
<td>4.0</td>
</tr>
<tr>
<td>1994</td>
<td>$11.25</td>
<td>4.5</td>
</tr>
<tr>
<td>1995</td>
<td>$12.50</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Changes in the Demand for Labor

26. In September 1992, *The Wall Street Journal* reported that the Internal Revenue Service (IRS) was planning to cut 414 positions at the same time it was going to expand its auditing, collection, and taxpayer assistance and education programs. The increase in output was to be made possible by expanding its computer system. Based on these facts, what can you say about the size of the substitution and scale effects at the IRS? Assume that the expansion of the computer system was triggered by a reduction in the price of computers.

27. An investment tax credit is effectively a subsidy paid to a firm that spends money on a new plant and equipment. It effectively reduces the price of capital the firm faces.

27a. What effect does economic theory predict an investment tax credit will have on employment opportunities in the industries that take advantage of it?

27b. Under what circumstances will workers gain from the investment tax credit?

Disturbing the Market Equilibrium

28. Consider the following statement.

“An increase in the supply of labor will cause the wage to fall. With a decrease in the wage, the demand for labor will increase, and an increase in the demand for labor tends to push the wage up. Therefore, an increase in labor supply will result in practically no long-run change in the wage because labor demand will increase also.”

28a. Is this an accurate assessment of how the labor market operates? If not, what is wrong with the reasoning in this statement?

28b. Carefully explain how an increase in the supply of labor disturbs the equilibrium. What kinds of things cause labor supply to increase?