SOLUTIONS TO TEXT PROBLEMS:

Quick Quizzes

1. The unemployment rate is measured through a survey of 60,000 households to find out the percentage of the labor force that is unemployed. The unemployment rate overstates the amount of joblessness because some of those who report being unemployed may not, in fact, be trying hard to find a job. But the unemployment rate understates the amount of joblessness because discouraged workers report being out of the labor force even though they want jobs.

2. An increase in the world price of oil increases the amount of frictional unemployment as oil-producing firms increase output and employment, but other firms, such as those in the auto industry, reduce output and employment. The sectoral shift from the auto industry to oil firms causes higher frictional unemployment for a time until workers have shifted from the auto industry to the oil industry. Although no increase in unemployment is really desirable, this type of frictional unemployment is necessary to reallocate resources between different sectors. Public policies that might affect the unemployment caused by this change in the price of oil include employment agencies, which can help auto workers move into the oil industry, job-training programs to help workers adapt to a new industry, and unemployment insurance, which keeps workers from suffering economic hardship while changing from one industry to another.

3. Figure 1 shows the supply curve (S) and the demand curve (D) for labor. The wage (W) is above the equilibrium wage (W_E). The result is unemployment, equal to the amount by which labor supply (L_S) exceeds labor demand (L_D).

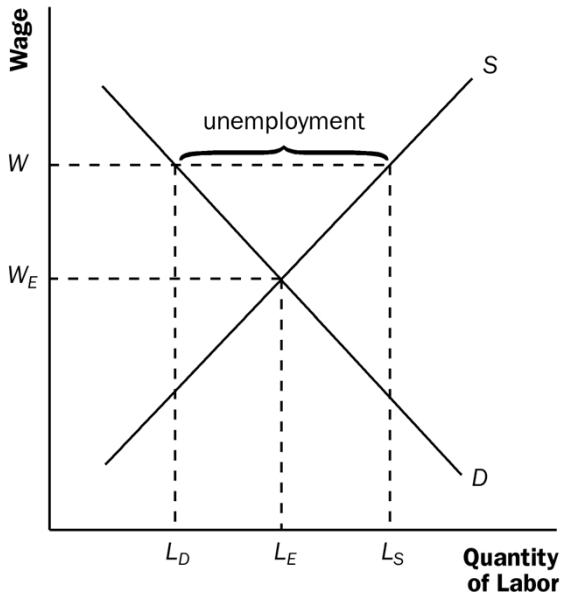


Figure 1

4. A union in the auto industry raises the wages of workers employed by General Motors and Ford by threatening to strike. To prevent the costs of a strike, the firms generally pay higher wages than they would if there was no union. However, the higher wages reduce employment at General Motors and Ford. Wages and employment in other industries are affected, since unemployed autoworkers seek jobs elsewhere, reducing wages and increasing employment.

5. There are four reasons that firms might find it profitable to pay wages above the level that balances the quantity of labor supplied and the quantity of labor demanded: (1) to ensure that workers are in good health so they will be more productive; (2) to reduce worker turnover because it is costly to hire new workers; (3) to make workers eager to keep their jobs, thus discouraging them from shirking; and (4) to attract a better pool of workers.

Questions for Review

1. The BLS categorizes each adult (16 years of age and older) as either employed, unemployed, or not in the labor force. The labor force consists of the sum of the employed and the unemployed. The unemployment rate is the percentage of the labor force that is unemployed. The labor-force participation rate is the percentage of the total adult population that is in the labor force.

2. Unemployment is typically short term. Most people who become unemployed are able to find new jobs fairly quickly. But some unemployment is attributable to the relatively few workers who are jobless for long periods of time.

3. Frictional unemployment is inevitable because the economy is always changing. Some firms are shrinking while others are expanding. Some regions are experiencing faster growth than other regions. Transitions of workers between firms and between regions are accompanied by temporary unemployment.

   The government could help to reduce the amount of frictional unemployment by public policies that provide information about job vacancies in order to match workers and jobs more quickly, and through public training programs that help ease the transition of workers from declining to expanding industries and help disadvantaged groups escape poverty.

4. Minimum-wage laws are a better explanation for unemployment among teenagers than among college graduates. Teenagers have fewer job-related skills than college graduates do, so their wages are low enough to be affected by the minimum wage. College graduates' wages generally exceed the minimum wage.

5. Unions may affect the natural rate of unemployment via the effect on insiders and outsiders. Since unions raise the wage above the equilibrium level, the quantity of labor demanded declines while the quantity supplied of labor rises, so there is unemployment. Insiders are those who keep their jobs. Outsiders, workers who become unemployed, have two choices: either get a job in a firm that is not unionized or remain unemployed and wait for a job to open up in the union sector. As a result, the natural rate of unemployment is higher than it would be without unions.

6. Advocates of unions claim that unions are good for the economy because they are an antidote to the market power of the firms that hire workers and they are important for helping firms respond efficiently to workers' concerns.

7. Four reasons why a firm's profits might increase when it raises wages are: (1) better paid workers are healthier and more productive; (2) worker turnover is reduced; (3) worker effort is increased; and (4) the firm can attract higher quality workers.

Problems and Applications

1. The labor force consists of the number of employed (138,547,000) plus the number of unemployed (6,021,000), which equals 144,568,000.

   To find the labor-force participation rate, we need to know the size of the adult population. Adding the labor force (144,568,000) to the number of people not in the labor force (67,723,000) gives the adult population of 212,291,000. The labor-force participation rate is the labor force (144,568,000) divided by the adult population (212,291,000) times 100 percent, which equals 68 percent.

   The unemployment rate is the number of unemployed (6,021,000) divided by the labor force (144,568,000) times 100 percent, which equals 4.2 percent.

2. Many answers are possible.

3. Men aged 55 and over experienced the greatest decline in labor force participation. This was because of increased Social Security benefits and retirement income than before, encouraging retirement at an earlier age.

4. Younger women experienced a bigger increase in labor force participation than older women because more of them have entered the labor force (in part because of social changes), so there are more two-career families. In addition, women have delayed having children until later in life and have reduced the number of children they have, so they are in the labor force for a greater proportion of their lives than was the case previously.

5. The fact that employment increased 2.1 million while unemployment declined 0.5 million is consistent with growth in the labor force of 1.6 million workers. The labor force constantly increases as the population grows and as labor-force participation increases, so the increase in the number of people employed may always exceed the reduction in the number unemployed.

6. a. A construction worker who is laid off because of bad weather is likely to experience short-term unemployment, since the worker will be back to work as soon as the weather clears up.

   b. A manufacturing worker who loses her job at a plant in an isolated area is likely to experience long-term unemployment, since there are probably few other employment opportunities in the area. She may need to move somewhere else to find a suitable job, which means she will be out of work for some time.

   c. A worker in the stagecoach industry who was laid off because of the growth of railroads is likely to be unemployed for a long time. The worker will have a lot of trouble finding another job when his entire industry is shrinking. He will probably need to gain additional training or skills to get a job in a different industry.

   d. A short-order cook who loses his job when a new restaurant opens is likely to find another job fairly quickly, perhaps even at the new restaurant, and thus he will probably have only a short spell of unemployment.

   e. An expert welder with little education who loses her job when the company installs automatic welding machinery is likely to be without a job for a long time, since she lacks the technological skills to keep up with the latest equipment. To remain in the welding industry, she may need to go back to school and learn the newest techniques.

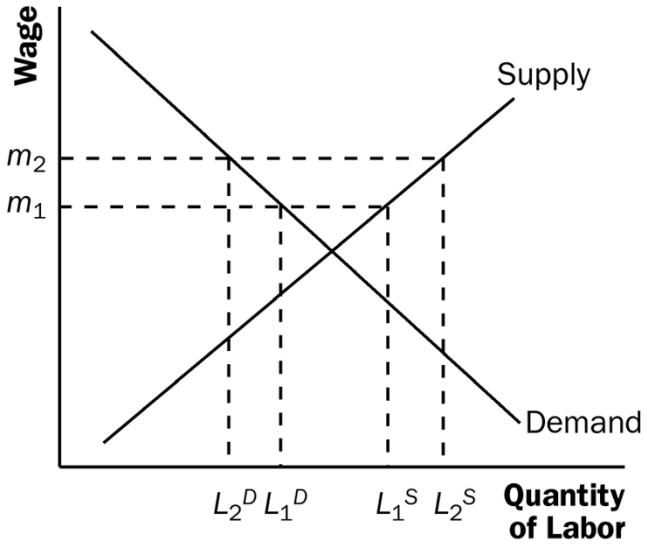


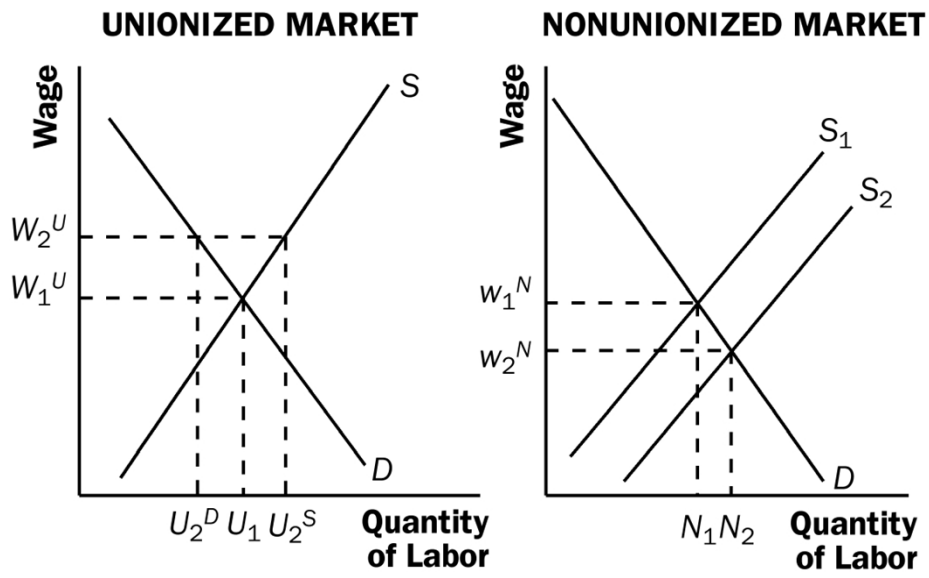
Figure 2

7. Figure 2 shows a diagram of the labor market with a binding minimum wage. The initial equilibrium with minimum wage m_1 has quantity of labor supply L_1^S greater than the quantity of labor demanded L_1^D, with unemployment equal to $L_1^S - L_1^D$. An increase in the minimum wage to m_2 leads to an increase in the quantity of labor supplied to L_2^S and a decrease in the quantity of labor demanded to L_2^D. As a result, unemployment increases as the minimum wage rises.

8. Firms in small towns have more market power in hiring because there are fewer opportunities for workers to find jobs elsewhere. Firms generally have less market power now than they used to, since it is now easier for employees to travel farther to go to work. This change in the market power of firms has reduced the need for unions, since competition from other firms keeps workers' wages and benefits high and reduces the need for collective bargaining.

9. a. Figure 3 illustrates the effect of a union being established in one labor market. When one labor market is unionized, shown in the figure on the left, the wage rises from w_1^U to w_2^U and the quantity of labor demanded declines from U_1 to U_2^D. Since the wage is higher, the quantity supplied of labor increases to U_2^S, so there are $U_2^S - U_2^D$ unemployed workers in the unionized sector. The quantity of labor employed in this market is inefficient, since more workers would like to have jobs at the existing wage.

   b. When those workers who become unemployed in the union sector seek employment in the nonunionized market, shown in the figure on the right, the supply of labor shifts to the right from S_1 to S_2. The result is a decline in the wage in the nonunionized sector from w_1^N to w_2^N and an increase in employment in the nonunionized sector from N_1 to N_2.



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10. a. When the Japanese developed a strong auto industry, U.S. auto demand became more elastic as a result of increased competition. With more elastic demand for autos, the elasticity of demand for American autoworkers increased.

    b. Since the rise in auto imports made the demand for autoworkers more elastic, to maintain a higher-than-competitive wage rate requires a greater reduction in the quantity of labor demanded. So the union had to choose between allowing the union wage to decline or facing the loss of many jobs.

    c. Given the tradeoff faced by the union, the growth of the Japanese auto industry forced the union wage to move closer to the competitive wage.

11. Workers need to be monitored if they earn a flat salary but little monitoring is needed under a commission structure. Under a system with flat salaries, the wage needs to exceed the equilibrium wage to encourage greater effort by workers. The wage need not exceed the equilibrium wage under a system with commissions, since workers can choose their level of effort and get paid in proportion to their effort. The factors that determine the type of compensation scheme include the cost of monitoring, the willingness of workers to bear risk under the commission scheme, and the interdependence of tasks.

12. a. If a firm was not providing such benefits prior to the legislation, the curve showing the demand for labor would shift down by exactly $4 at each quantity of labor, because the firm would not be willing to pay as high a wage given the increased cost of the benefits.

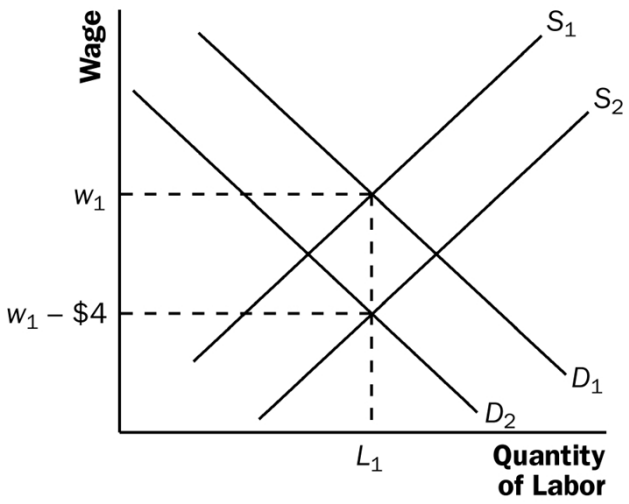

Figure 4

b. If employees value the benefit by exactly $4 per hour, they would be willing to work the same amount for a wage that's $4 less per hour, so the supply curve of labor shifts down by exactly $4.

c. Figure 4 shows the equilibrium in the labor market. Since the demand and supply curves of labor both shift down by $4, the equilibrium quantity of labor is unchanged and the wage rate declines by $4. Both employees and employers are just as well off as before.

d. If the minimum wage prevents the wage from falling, the result will be increased unemployment, as Figure 5 shows. Initially, labor supply is L_1^S and labor demand is L_1^D, so unemployment is given by L_1^S - L_1^D. The downward shift of both the demand and supply curves gives a new equilibrium with labor supply L_2^S, labor demand L_2^D, and unemployment L_2^S - L_2^D. The wage is unchanged, the level of employment declines, and the level of unemployment rises. Employers are worse off because they hire less labor at a higher wage (including benefits). The workers who become unemployed are worse off because of the policy, while workers who remain employed are better off, since their wages plus benefits have increased.

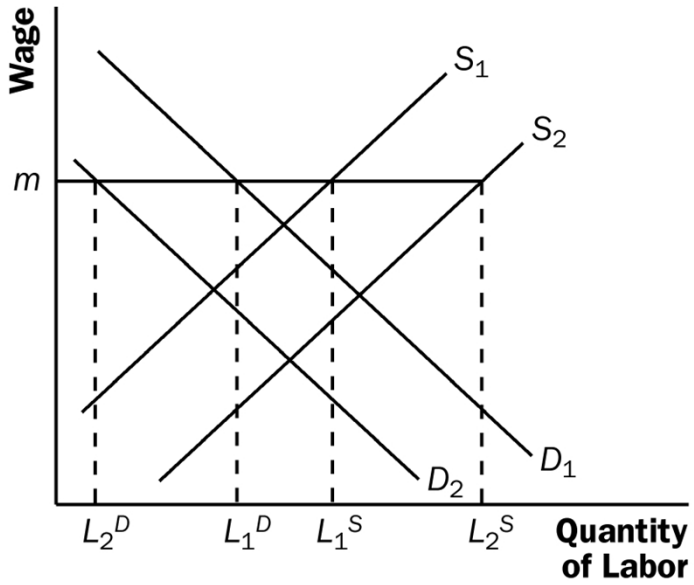

Figure 5

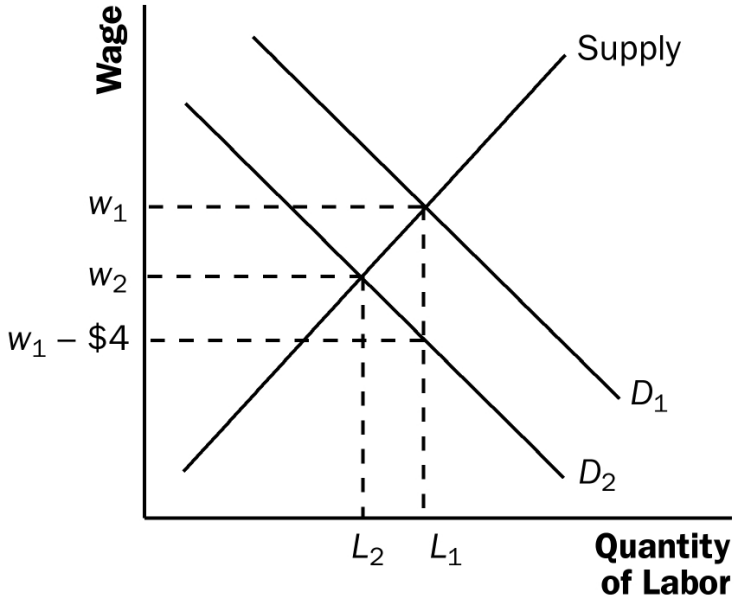

Figure 6

e. If the workers do not value the mandated benefit at all, the supply curve of labor does not shift down. As a result, in part c, the wage rate will decline by less than $4 and the equilibrium quantity of labor will decline, as shown in Figure 6. The new wage, w_2, will be less than w_1, but greater than w_1 - $4. Employers are worse off, since they now pay a greater total wage plus benefits for fewer workers. Employees are worse off, since they get a lower wage and work less.

With a minimum wage in effect, as in part d, the impact on unemployment is not as bad as when the workers valued the benefits. Looking back at Figure 5, the only difference

is that the labor-supply curve does not shift, so the equilibrium quantity of labor supplied stays the same at L_1^S. So the wage stays the same, labor demand declines, labor supply is unchanged, and unemployment rises. As before, employers are worse off since they get less labor at a higher wage plus benefits. Employees are worse off, too, since there is less employment at the same wage.