1. The answer depends on the strength of labor demand for persons in occupation A. This is illustrated in Figure 8.4 below. The dashed line at $w = 1.0$ is the line of equal wages. The supply curve $S_j$ represents the supply of people to occupation B. It begins below the line of equal wages and slopes upward, illustrating that a successively higher wage is required to induce people to take the right jobs. The supply curve $S_j$ begins below the line of equal wages and slopes upward, illustrating that a successively higher wage is required to induce people to take the right jobs.

Comment on the relative riskiness of these industries and what the theory of compensating wage differentials would predict about their relative wages. Holding everything else constant, an increase in the expected riskiness of occupation B would lead to an increase in the wage differential between the two occupations.

2. On this page, keep all parameters and default definitions. Then enter each of the following 2-digit SIC codes and record the total number of inspection found (summarized in line on top of the table for that industry during the time period stated in "Back after recording each figure in order to enter a new SIC code.

1. Go to http://www.bls.gov/eps/ for Weekly Earnings Data. Select the text version of the table that contains the weekly earnings of full-time wage and salary workers by detailed occupation and sex. Print out this table (it will probably have to be reduced and printed in landscape).

2. Pick one high-paying occupation and one low-paying occupation and discuss the economic, institutional, and social reasons why these occupations pay different amounts.
wages since, by assumption, some people prefer night work and presumably would work in occupation B at a lower wage than in occupation A. If the demand curve is \( D_1 \), the wage in occupation B will be less than in A; if demand is much greater, such as \( D_2 \) however, the wage in occupation B will be greater than occupation A.

2. The large earnings of the Jacksons was due to a large demand for their music combined with a very limited supply. In Figure 8.2 below, the labor supply curve of the Jackson is vertical above the wage \( W_0 \) showing that no matter how high the wage, the Jacksons were willing to supply only \( L_1 \) hours of concert music for the Victory tour. The wage \( W_0 \) represents the minimum supply price of the Jacksons—at any wage below \( W_0 \) they could earn more in some other line of work and would supply zero hours to the Victory tour. If demand for their music had been weak, represented by the demand curve \( D_1 \), the hourly wage of the Jacksons would have been only \( W_1 \), yielding a total amount of earnings from the tour of \( W_1 \times L_1 \). In fact, however, demand was quite strong, represented by the demand curve \( D_2 \), giving rise to a high wage of \( W_2 \) and high earnings of \( W_2 \times L_1 \) ($30,000 per minute). Most of the earnings of the Jacksons were economic rent. In the graph, the amount of economic rent is the difference between \( W_2 \times L_1 \) and \( W_0 \times L_1 \).
3. The answer to this question is complex and there is evidence on both sides. In support of Smith, one observes many jobs of an unpleasant or unsafe nature that do seem to pay a compensating wage differential in their favor. Examples are lumberjack, coal miner, and ironworker. In each case, workers would refuse to take these jobs if some premium in wages was not offered. The labor market also offers examples that support Mill, however. Practical nurses, for example, generally make less than hospital orderlies, yet the nurses have the greater share of unpleasant duties. One explanation for this is that the orderlies are generally male while the nurses are usually female. A second example concerns workers who clean up toxic waste spills. Because of the scarcity of jobs during recessions, unemployed workers take such jobs at low rates of pay even though the health hazards were substantial. If alternative jobs are available, the toxic waste firms would have had to pay substantially higher wages in order to attract workers from other, more safe occupations. The conclusion seems to be, therefore, that in competitive markets the forces of supply and demand do give rise to compensating wage differentials as Smith claimed. Between some occupations, however, wage differentials are not compensatory, as Mill claimed, because of factors such as discrimination, custom, or unemployment in the market.

4. The theory of compensating differentials shows that skilled workers should enjoy a wage advantage over unskilled workers because of their investment in education and training. Over the business cycle, however, the skilled/unskilled wage differential widens in recessions but narrows in periods of prosperity. There seems to be two interrelated reasons. One is that wages are more flexible in the market for unskilled workers since that labor market more nearly resembles an auction-type market. The second reason is that during recessions the increase in the competition for jobs is proportionately greater in the market for unskilled workers. This reflects the fact that employment in unskilled occupations (e.g., general laborers) is often more cyclically volatile than in skilled occupations (e.g., accountant) and that the unskilled are more likely to be laid off by firms because of a lower amount of fixed costs of employment. The result is that the relative increase in labor supply is greater in unskilled labor markets during a recession, putting more downward pressure on the wages of unskilled workers. During the recovery phase of the business cycle, the opposite process happens. As the increase in aggregate demand soaks up the unemployed, wages in the unskilled market will rise proportionately faster, reflecting the greater sensitivity of wages of unskilled workers to supply and demand conditions in the market. Firms also raise the wages of skilled workers during a cyclical recovery as they compete for additional labor. For skilled workers, however, firms also augment their supply through increased training, lessening the role of direct wage competition.

5. The text cites three reasons that might explain this phenomenon. The first is interrupted work careers. The occupation of airline pilot requires more training than does that of dental hygienist. Part of the training to be an airline pilot is general in nature, another part is firm specific. With respect to the general training, women may be reluctant to make the investment necessary to be an airline pilot since they may not recoup the benefits of higher wages if they drop out of the labor force in future years for family reasons. With respect to the specific part of the training, airline companies may be unwilling to hire women as pilots for fear that they will quit and the firm will lose its investment. Finally, if the job skills of a dental hygienist depreciate more slowly than those of an airline pilot, women have an incentive to become hygienists since the loss of earning power in that occupation will be smaller if they interrupt their work careers.

A second explanation has to do with sex roles. It is probable that the occupation of airline pilot is generally perceived as a "male" occupation and a dental hygienist is perceived as a "female" occupation. These stereotypes may have an important impact in shaping men's and women's tastes for these two occupations. Men, for example, may avoid
the occupation of dental hygienist because it is perceived as a job for women and, thus to
erate that type of work would call into question their masculinity. Similarly, women may
avoid choosing to be an airline pilot because the perceived attributes of the occupation
conflict with the traditional feminine role model. It is also possible that the attributes of
being an airline pilot (e.g., a large amount of decisionmaking and responsibility, long
periods away from home) appeal to men but not to women while the attributes of being a
dental hygienist (e.g., helping take care of other people) appeal to women but not to men.

A third explanation has to do with discrimination. It is possible that the reason few
women are airline pilots is because they were denied access to training, either by the U.S.
military or by airline firms themselves. A second source of discrimination is the refusal of
airline companies to hire qualified women pilots. They may arise from the prejudice of the
employers, the refusal of male pilots to fly with female pilots, or the adverse reaction of the
flying public to having women in the cockpit. It is also possible that some men may have
been denied the opportunity to be a dental hygienist because of discrimination. A dentist, for
example, might be afraid of the adverse reaction of his customers if a male hygienist
cleaned their teeth, and would thus refuse to hire a male for this position.

6. There are two points of view on this subject. The human capital perspective argues that the
wage gap between women and men is largely a market determined compensating wage
differential. In this view, women’s wages are less than men’s for a number of legitimate
reasons. Women, for example, have fewer years of labor market experience and are less
likely to have graduated from college, and purposely choose occupations which offer
flexible hours, ease of entry and exit, and low rates of atrophy on human capital. Because
the majority of women choose to work in a relatively small number of occupations, the
result is occupational crowding which further depresses wage rates due to the large
expansion of labor supply.

The institutional perspective argues that women’s lower earnings are largely the result
of discrimination and the segmentation of labor market into a high wage primary sector
employing men and a low wage secondary sector employing women. In this view, the
reason women have less college education or choose to work in a narrow set of “female”
occupations is the result not of voluntary choice but lack of choice. This lack of choice
emanates from several sources. One is discrimination and sexism in the family which results
in boys having more opportunities than girls. Another is the refusal of employers to hire
women into traditional male occupations. Finally, it is argued that women are paid less than
men because employers think men are the breadwinners and are thus more deserving.

7. From an economic point of view, the statement can not be supported. To reduce the
number of industrial accidents requires additional inputs of capital and labor. Because resources are
scarce, the use of capital and labor for improvements in industrial safety necessarily implies
less production of some other desirable good or service. To achieve a maximum of social
welfare, therefore, society must balance the additional benefits of safety improvements
versus the additional costs. As shown in the text (Figure 8.8), lowering the accident rate to
zero would involve very large additional costs yet would provide relatively few benefits.
The net result is an inefficient use of resources as society produces too much safety but not
enough of other goods and services.

There are several ways to calculate the value of life, or put another way, the economic
loss from a fatal accident or injury. One is to calculate the present value of the income that
the worker would have earned had he or she not been killed. Another is to calculate the
implicit value of life using the probability of death in the occupation and the size of the
compensating wage differential paid workers for bearing that level of risk (see footnote 44
in the text). In either case, it is possible to calculate the economic loss to the person of a
fatal accident or injury. Such calculations are admittedly subject to a large amount error.
Nevertheless, informed policy-making requires some attempt at a rational balancing of benefits and costs.

8. Shown in Figure 8.8 are the isoprofit curves $AB$ and $CD$ for two different firms. Person 1 with indifference curve $I_1$ works for the firm offering the wage/fringe combinations on the isoprofit curve $AB$. The equilibrium combination of wages and fringe benefits is $W_1, F_1$ (point $X$). Person 2 with indifference curve $I_2$ works for the firm offering the wage/fringe benefit combinations on the isoprofit line $CD$. The equilibrium combination of wages and fringe benefits is $W_2, F_2$ (point $Y$). Person 2 receives more of both wages and fringe benefits.

Competitive analysis presumes that firms always strive to minimize cost. Firms that are in sheltered product markets, however, may be under less pressure to hold down costs such as employee compensation. Given barriers to entry into the product market, these firms are also likely to earn above normal profits. The result is that they may willingly share some of their profits with employees in the form of higher wages and fringe benefits. If the labor market and product market are both competitive, however such an outcome could not persist in the long run since the high-cost firms would eventually be driven out of business.

![Figure 8.8](image)

9. Current practitioners of an occupation may desire licensing as a way to obtain monopoly rents. In this case, licensing works to the detriment of society since it results in an artificial restriction on labor supply to the occupation, and thus higher wages for the practitioners. Practitioners may also desire licensing as a means to promote the welfare of consumers and the public image of the occupation. Without licensing, for example, the professional standards and reputation of qualified practitioners might be threatened by competition from unscrupulous or ill-trained rivals. In this case licensing may well increase social welfare.

10. The theory of compensating wage differentials states that jobs with undesirable characteristics must pay higher wages than otherwise comparable jobs in order to attract workers. If most workers live in the suburbs (away from the city) and they find commuting a distasteful characteristic of a job, employers located downtown (in the central city) will have to pay higher wages than employers in the suburbs. Figure 8.9 depicts the compensating wage differential that would arise between jobs in the city and otherwise comparable jobs in the suburbs. Given the demand for labor in the city ($P$) and the willingness of workers to supply their labor to the city at different wages ($S$), $W_1$ becomes the equalizing differential necessary to hire the $L_1$ number of workers demanded in the city.
Figure 8.9
Internet Assignments

1. Go to <http://www.bls.gov/cps/>
   Scroll down to the TXT Version of the Table 37 titled, "Median weekly earnings of full-time wage and salary workers by selected characteristics." Record the median weekly earnings for men and women for the two age groups listed (16-24 year olds, and 25 years and older). Calculate the female/male wage ratio. Appealing to some of the explanations of wage differentials offered in Chapter 9, explain why the wage ratio is lower for the older workers than for the younger workers. In other words, why does the wage gap between men and women grow over time (as the workers get older)?

2. Use one of the following Internet search engines (or another of your choice) to search for information about Affirmative Action (search on "affirmative action"):
   <http://www.yahoo.com>
   <http://www.excite.com>
   <http://www.altavista.com>

   Record one argument found in favor of Affirmative Action and one argument against it. Also record the address at which the statements/arguments were found. How convincing did you find the arguments? Has this assignment altered your opinion of the Internet as a source for truthful, unbiased information? In other words, can you believe everything you read on the Internet?

Answers to Review Questions

1. Prejudice by employers may or may not result in lower wages for minority workers. If the supply curve of minority workers intersects the labor demand curve on the horizontal section (such as point X in Figure 9.2 of the text) the wages of minority and majority workers will be equal. If the supply curve intersects the demand curve on the downward sloping portion (such as point Y), however; minority workers will earn a lower relative wage. In this situation, some firms (those whose taste for discrimination is relatively low) will hire only minority workers, while other firms (the ones with a large taste for discrimination) will have only majority workers.

   Prejudice by workers results in equal wages for minority and majority workers, but firms become completely segregated. Since a firm has to pay the majority workers a wage premium to work with minority workers, labor costs are minimized by hiring only workers of one group or the other.

   Prejudice by consumers also results in equal wages, but in this case minority workers are segregated in departments of the firm which do not require personal contact with customers. If the firm were to employ minority workers in jobs entailing contact with prejudiced customers, the wage rate of the minority workers would have to be reduced so the firm could lower its product price to overcome the customers prejudice. This is an unstable situation, however, since minority workers could earn equal wages by working in jobs where customer contact was unnecessary.

2. Major League owners had a large incentive to hire Gibson since they could obtain a hitter of Babe Ruth’s caliber at one-tenth the price. There are several possible explanations for why none did. One is prejudice on the part of the owners. This explanation is relatively unlikely, however, since Gibson’s relative wage was sufficiently low that only the most prejudiced of
owners (those with a very large \( d_i \)) would refuse to hire him. A second and more probable explanation is that Gibson was excluded from the Major Leagues because of prejudice on the part of white players. In earlier years, white players refused to take the field if blacks were allowed to participate, forcing the owners to remove the blacks from the team. It is clear that white players also had more incentive to bar the black players than did the team owners since discrimination cost the owners profits but protected the jobs of the white players. A third possible cause of prejudice was on the part of white fans. Even if the owners were unprejudiced, they still may have refused to hire blacks if they were afraid that white customers would not attend games in which blacks were allowed to play. Finally, it is possible that Gibson was a victim of statistical discrimination. Many whites were convinced at the time that the average black player did not have the skills and ability to compete in the Major Leagues. Thus, although Gibson was the home run king in the Negro Leagues, because he was black the white team owners may have refused to hire him out of fear that, like the average black player, he was not of a high enough skill level. In hindsight it is clear that the owners seriously underestimated the playing ability of the average black player.

3. With respect to secretaries, the model of monopsonistic discrimination would not be able to explain the lower earnings of females. Two necessary conditions for monopsonistic discrimination are that there be only one or several firms in the labor market and that the labor supply curve of female secretaries be more inelastic than that of male secretaries. Neither condition is likely to be met. Even in smaller cities there are usually a number of firms that hire secretaries. Likewise, the supply of female secretaries is probably more elastic than that of male secretaries because many more women have the requisite skills. Just the reverse is true with respect to male and female professors, however. Many colleges and universities are located in small towns where they are the only employer of professors. The labor supply curve of female professors is also likely to be more inelastic than that of male professors because there are fewer women qualified to be professors and because many female professors are tied to the local area by family ties.

4. It is probable that the person from Boston has the better chance of being hired. One possible explanation is prejudice. Some northerners are prejudiced against people from the South (and vice versa) for reasons that have to do with differences in culture, speech, and regional histories. Given the choice between two equally qualified job candidates, the personnel manager of the New York bank may exercise his or her prejudice against southerners by hiring the person from Boston. It is also possible that the person from Alabama may not be hired because of statistical discrimination. Alabama, for example, spends considerably less money per student on education than does Massachusetts, causing the average quality level of Alabama college graduates to be less than that of Massachusetts college graduates. Although the degrees and grade point average of the two persons are equal, since on average a person from Alabama has a less quality education (and thus a lower level of productivity), the bank in its screening process may rationally decide to hire the person from Boston.

5. The position a worker attains in the labor market is the culmination of a number of factors. First of all, individuals are born with different skills and capabilities. Those with less aptitude to learn new things or to conform to the expectations of the work place will not reach the highest level of earnings. Second, personal decisions regarding investments in education, attachment to the labor market, and choice of occupation have a great deal to do with final earnings levels. And, lastly, the evaluation and reward of the skills and human capital that a worker brings to the market influences where that worker ends up. When considering the differences in earnings of MBA graduates, we can safely rule out differences in educational investment, and probably rule out much difference in skills and capabilities men and women bring with them to the labor market. So what we are left with to explain the differentials that arise are individual choices by and differential treatment of
men and women. Individual choices may influence the attainment of high ranking positions within a firm if women (as is the case on average) choose to spend inure time out of the labor market to bear children and raise their families. These absences are not looked upon favorably by employers in making promotion and advancement decisions. As full-time working women are less and less likely to take much (if any) time away from work to have children (they return to work much sooner), this becomes less of a satisfactory explanation for different labor market outcomes between men and women. The last explanation we are left with involves differential treatment of men and women in the labor market; discrimination, in other words. If women are less likely to receive training, or receive a different type of training, then men, women will be less likely to attain the highest ranking positions within their firms. There is also evidence that some women suffer what is called the Glass Ceiling effect, where they languish just below the highest level without any apparent barrier to their advancement, yet they never get the promotion. Also, women are more likely to find themselves promoted or placed into dead-end jobs; jobs from which there is not upward escape. So, the lower chance of women MBAs reaching the highest rank in their firm is likely best explained by a combination of individual choices and discrimination.

6. (a) The requirement of the modeling agency that employees (models) weigh 130 pounds or less is a condition based on adequately performing one’s job as a model; portraying a specific image to the public. The weight requirement for wait staff is not a necessary condition for adequately performing one’s job. There is no requirement of the job (taking orders and delivering food) that necessitates a worker to weigh less than 130 pounds.

(b) Labor market discrimination is defined as differential treatment (pay, hiring, promotion, etc.) of workers based on some characteristics that is unrelated to their performance. Unless the restaurant owner can demonstrate that weight is a necessary condition for adequately performing one’s job as a wait person, he/she is being discriminatory.

7. The residual approach is a statistical technique used by economists to decompose the wage gap between workers of two different demographic groups into the part due to productivity differences and the part due to labor market discrimination. One reason black males earn less than white males is because they have less years of education and OJT and, thus, are less productive. To determine the amount of the pay gap due to productivity differences, economists calculate what the earnings of the black males would have been given their level of education, OJT, and other such factors if they received the same return to these characteristics as white males. The remainder of the observed pay gap is unexplained by productivity differences and, therefore, is presumed due to discrimination.

The estimate of discrimination obtained with the residual method may either over- or underestimate the true impact of discrimination on wages. The residual method will overstate the importance of discrimination if factors responsible for productivity differentials between the black and white males are omitted. It will underestimate the impact of discrimination if pan of the difference in productivity related characteristics between the two groups (such as years of OJT) is itself due to discrimination.

8. The black officers had to prove that the written aptitude test led to a disparate impact on the chances of promotion for white and black officers and, in particular, that white officers had a significantly greater probability of passing the test. The city then had to prove that the aptitude test provided an unbiased measure of an officer’s ability and that the scores on the test were demonstrably related to successful performance on the job.

9. A comparable worth law would require that firms pay equal wages to workers performing jobs of equal value. The value of jobs would be determined through the statistical process of job evaluation. The basic argument advanced in support of such a law is that women are
segregated into different occupations than are men and employers systematically pay the men more than the women, even though the jobs are of equal economic value. There are several arguments against a comparable worth law. One is that it is impossible to statistically measure the true worth of a job. A second is that pay differences between “male” occupations and “female” occupations are due to legitimate labor market considerations and not discrimination. A third is that a comparable worth law would disrupt the allocative efficiency of the labor market.