

Name _____

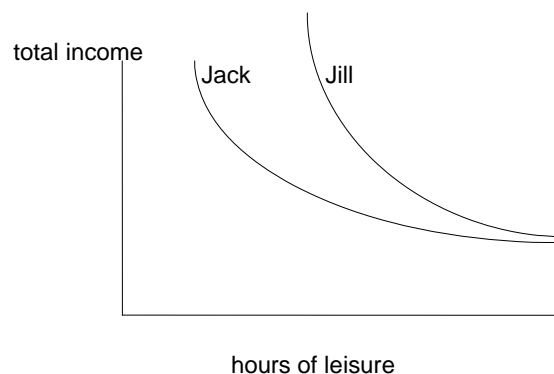
ECO361: LABOR ECONOMICS
SECOND MIDTERM EXAMINATION

NOVEMBER 11, 2008
Prof. Bill Even

DIRECTIONS.

The exam contains a mix of short answer and essay questions. Your answers to the 23 short answer portion of the exam (3 points each) should be listed on the answer sheet attached to the end of the exam. No credit will be given for answers placed elsewhere. Your answers to the essays (55 points total) should be provided in the blue book provided.

Consider the two indifference curves drawn below representing the preferences of Jill and Jack.

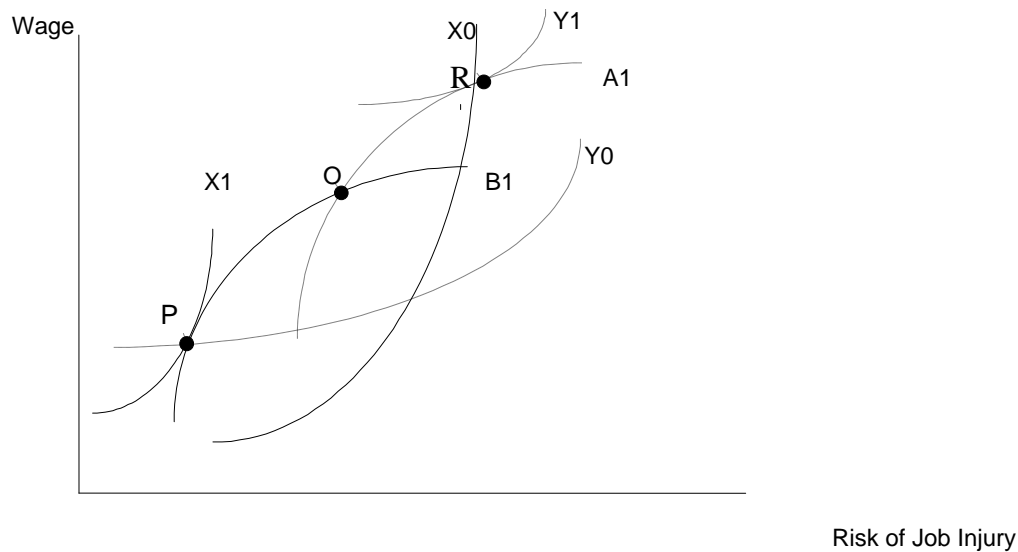


1. Given the indifference curves, it would be correct to conclude that:
 - a. For any given number of leisure hours, Jack is willing to give up an hour of leisure for less additional money than Jill.
 - b. Jack has a higher wage rate than Jill
 - c. Jack has a lower reservation wage rate than Jill
 - d. all of the above.
 - e. only a and c.
2. According to labor supply theory, if a worker's wage rate falls, she will
 - a. definitely work more hours
 - b. definitely work less hours
 - c. work more hours only if the substitution effect dominates the income effect.
 - d. work more hours only if the income effect dominates the substitution effect.
3. The Social Security system used to apply an earnings test to people beyond age 65 who collected Social Security benefits and earned more than \$17,000. In 2000, the earnings test was eliminated for workers over age 65. Suppose that prior to 2000 when the earnings test was still in place, John was earning \$25,000 from his job and collecting Social Security. Elimination of the earnings test would lead to
 - a. an ambiguous effect on John's work hours since the income effect would cause him to work more but the substitution effect would cause him to work less.
 - b. an ambiguous effect on John's work hours since the income effect would cause him to work less but the substitution effect would cause him to work more.
 - c. an increase in John's work hours since the substitution effect would cause him to work more and there is no income effect.
 - d. a decrease in John's work hours since the income effect would cause him to work less and there is no substitution effect.

To answer the next 3 questions, suppose that a defined benefit plan provides an annuity at retirement equal to 1 percent * years of service * final salary. Jerry started with the firm at age 25 and would have 30 years of service if he retires at 55, he would receive an annual benefit equal to 30% of his final salary. Assume that Jerry will live until age 80 and would therefore expect to collect 25 years of benefits if he retired at age 55; that there is a zero interest rate; and that his final salary will be \$50,000 regardless of when he retires.

4. For the pension to be actuarially fair, it would have to increase the annual benefit by \$_____ for postponing retirement from age 55 to age 56.
5. Jerry's incentive to postpone retirement by a year would be greater if either interest rates (rise, fall) or his remaining life expectancy (rises, falls).
 - a. rise; rises.
 - b. rise; falls.
 - c. fall; rises.
 - d. fall; falls.
6. Suppose that the generosity rate in the above pension was reduced from 1.0 to 0.9 percent. If Jerry had originally planned to retire at age 60, this change in the benefit formula would
 - a. lead to later retirement.
 - b. lead to later retirement only if the wealth effect dominated the substitution effect.
 - c. lead to earlier retirement only if the wealth effect dominated the substitution effect.
 - d. lead to earlier retirement.

To answer the next 4 questions, refer to the diagram drawn below. The indifference curves for worker types X and Y are given by X0, X1 and Y0, Y1. The iso-profit curves for firm types A and B are given by A1 and B1.



7. In the above diagram, workers prefer points to the _____ of any given indifference curve and firms prefer points to the _____ of any given isoprofit curve:

- a. northwest; southeast; b. northwest; northwest; c. southeast; southeast. d. southeast; northwest.

8. Based on the diagram above, one can conclude that

- a. for any given level of risk, it is more costly for type A firms to reduce risk than type B firms.
 b. for any given level or risk, it is more costly for type B firms to reduce risk than type A firms.
 c. for any given level of risk, type B firms will have greater profits than type A firms.
 d. both a and c.
 e. both b and c.

9. Based on the diagram above, one can conclude that:

- a. type X workers are more averse to risk than type Y workers
 b. type X workers are less averse to risk than type Y workers.
 c. for any given risk/wage combination, X workers will be happier than Y workers.
 d. both a and c.
 e. both b and c.

10. Based on the above diagram, suppose that there are both type A and type B firms in the market and type X and Y workers. Also, assume that the market is competitive and that B1 and A1 represent isoprofit curves with zero profits. We can conclude that the equilibrium will result in:

- a. type X workers employed by type B firms and receiving the compensation package P
 b. type X workers employed by type A firms and receiving the compensation package R
 c. type Y workers employed by type B firms and receiving the compensation package P
 e. both b and c.

11. Based on the equilibrium matching of workers to firms, we should expect that type X workers will receive (higher, lower) wages than type Y workers and accept jobs at the firm where it is (more, less) costly to eliminate risk.

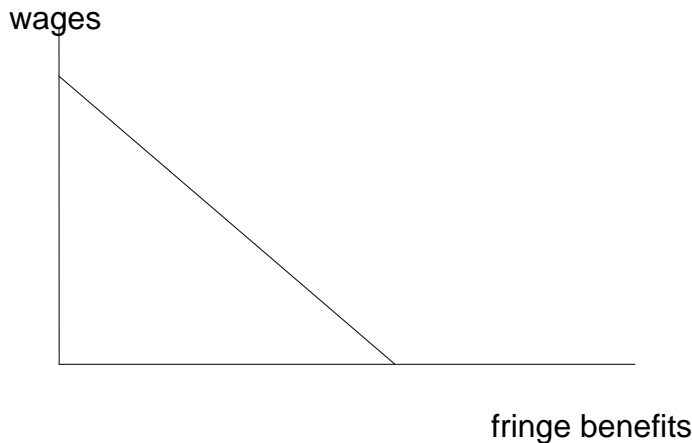
- a. higher; more. b. higher; less. c. lower; more. d. lower; less.

12. Suppose that that workers of equal skill are in two jobs that differ only in terms of the risk of death. On job A, workers are paid \$40,000 per year. On job B, workers are paid \$35,000 per year. The annual risk of death on job A is $1/10,000$ and the risk on job B is $1/20,000$. Based on this information, what is the corresponding “statistical value of a life”?

13. The approach used in the previous question to estimate the “statistical value of a life” would be

- a. an overstatement of the true value workers place on fatality risk.
- b. an understatement of the true value that most workers in type A jobs place on fatality risk, but an overstatement of the true value for workers in type B jobs.
- c. an understatement of the true value that most workers in type B jobs place on fatality risk, but an overstatement of the true value for most workers in type A jobs.
- d. an understatement of the true value workers place on fatality risk.

Consider the iso-profit line for a firm considering the optimal mix between fringe benefits and wages.



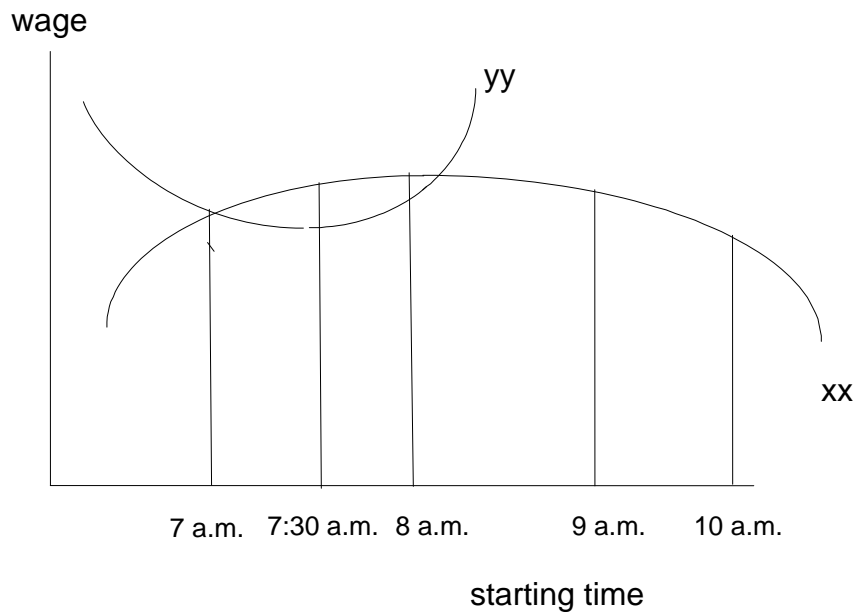
14. The isoprofit line would become steeper (i.e. greater negative slope) if:

- a. shifting from wages to fringe benefits helped reduce worker turnover.
- b. shifting from wages to fringe benefits attracted a “sicker” group of workers.
- c. employers had to pay Social Security taxes on wages paid to their employees, but not on fringe benefits.
- d. all of the above
- e. b and c

15. According to our coverage of a recent paper in class, commuting costs are higher in New York than in Minneapolis. This difference helped explain the fact that the labor force participation rates of married women were higher in _____ and, among working men, hours worked per week in higher in _____.

- a. New York; New York.
- b. New York; Minneapolis.
- c. Minneapolis; Minneapolis.
- d. Minneapolis; New York.

To answer the next 4 questions, consider the diagram below which provides a firm's zero-iso-profit curve (xx) and a worker's indifference curve (yy) between the hourly wage rate and the time of day that workers begin work each day.



16. Based on the diagram provided, holding wages constant, firms would realize the greatest profit if workers started their work day:
- at 7 a.m.
 - between 7 and 8 a.m.
 - at 8 a.m.
 - after 8 a.m.
17. Based on the diagram provided, holding wages constant, workers would be happiest to start their work day:
- at 7 a.m.
 - between 7 and 8 a.m.
 - at 8 a.m.
 - after 8 a.m.
18. Suppose all workers and all firms are identical to those represented by the above indifference curve and isoprofit line. In equilibrium, we should expect to see that workers start their day:
- at 7 a.m.
 - at 7:30 a.m.
 - between 7:30 and 8:00 a.m.
 - at 8 a.m.
19. Suppose all workers have identical preferences to those illustrated above but firms differ in terms of the start time that maximizes profits for a given wage rate. We should expect to find that, in equilibrium,
- all firms will have a start time of 7:30 a.m.
 - firms who have a start time of 7:30 a.m. will pay lower wages than firms that start either later or earlier than 7:30 a.m.
 - firms who have a start time of 8:00 a.m. will pay lower wages than firms that start either later or earlier than 8:00 a.m.
 - all firms will have a start time of 8:00 a.m.

20. Over the past 20 years, the returns to education increased
- because the demand for low skill workers dropped as the U.S. reduced trade barriers and imports increased.
 - because there was technological change that increased the demand for more educated workers and decreased the demand for less educated workers.
 - because unionism declined
 - all of the above.
21. When the average difference of earnings between college graduates and high school graduates is used to estimate the “return” to a college degree, an economist would argue that the estimated return would be:
- biased downward if more able workers are more likely to go to college.
 - biased downward if earnings differences don’t account for the fact that college graduates generally have more generous fringe benefit packages than high school graduates.
 - biased upward if the jobs that high school graduates accept typically have less desirable non-pecuniary features than the jobs that college graduates accept.
 - all of the above.
 - only b and c.
22. Other things being the same, the internal rate of return on acquiring a college education (net of taxes) would increase as:
- the expected years of work rises.
 - college tuition decreases.
 - the income tax system becomes less progressive
 - all of the above.
23. Based on our discussion in class, a recent story covered by National Public Radio suggested that, compared to a decade ago, workers who are laid off today:
- are less likely to be placed on “recall” where the firm promises to rehire the worker when business recovers.
 - are more likely to be placed on “recall” where the firm promises to rehire the worker when business recovers.
 - are less likely to have lower wages two years after the lay-off.
 - both a and c.
 - both b and c.

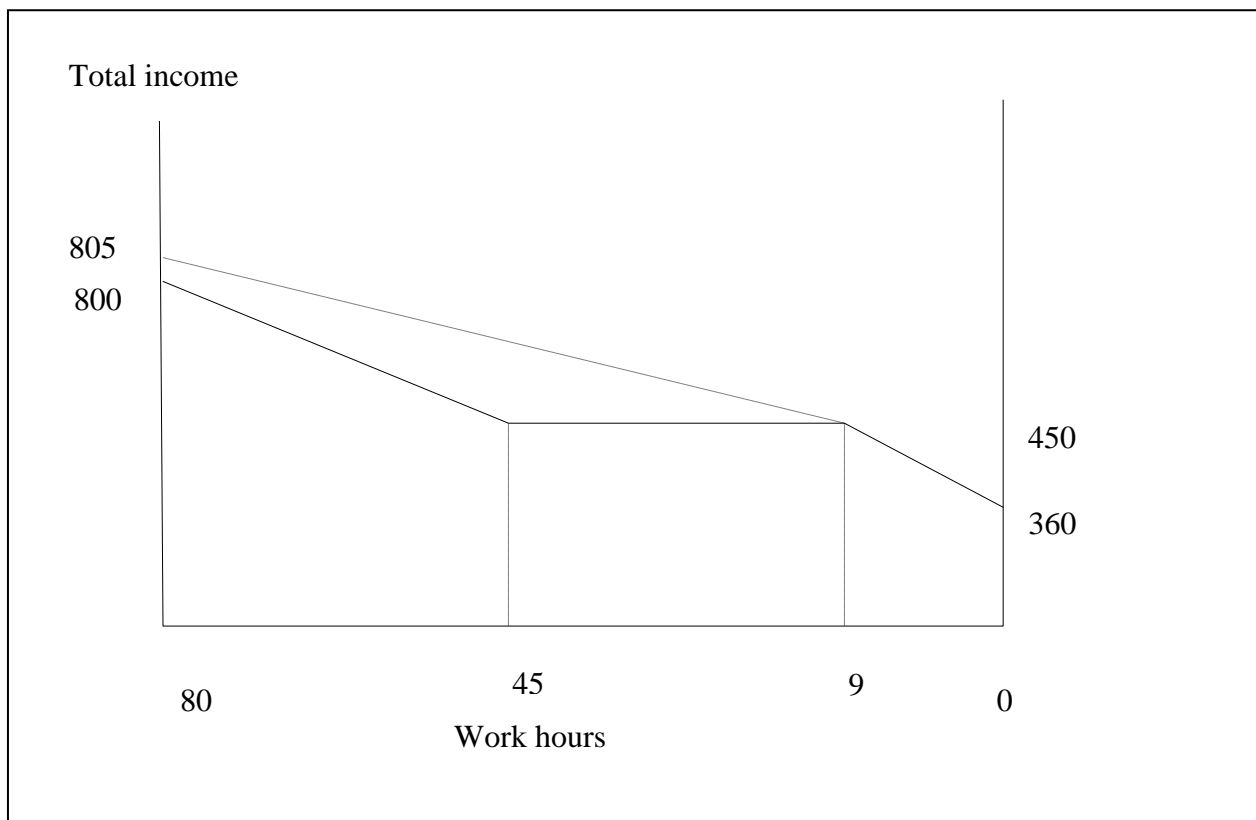
1. (25 points) The Iowa unemployment insurance system provides a weekly benefit equal to $1/22$ of a worker's highest quarter of earnings in the base period, but no more than \$360 per week. Moreover, quoting from the Iowa UI website:

If you work while claiming benefits, you can earn up to 25 percent of your weekly benefit amount (WBA) before any deduction is made from your benefit payments. All earnings over 25 percent of your WBA are fully deductible. Working part-time will extend the time you may draw benefits within your benefit year. However, the maximum benefit amount (MBA) does not change.

Example: If your WBA is \$360, you could earn \$90 (25 percent of \$360) before you would receive a reduction in your benefit payment. If you had \$130 in gross earnings for a week, your benefit payment would be reduced by \$40 (\$130 minus the \$90 earning limit = \$40 reduction) and your benefit amount for that week would be \$320 (\$360 minus \$40).

Suppose that a worker is currently eligible for a \$360 WBA and could take a job that pays \$10 per hour. Assume that the worker has no non-labor income other than the UI.

- a. Draw the budget line for this person with weekly hours measured on the horizontal axis. **Allow weekly work hours to range from 0 to 80.** Be sure to provide numerical detail on total income for each of the following points on your graph:
- 0 work hours.
 - the point where the worker begins to lose UI benefits because earnings exceed 25% of WBA.
 - the point where the worker no longer collects any UI benefits.
 - the point where the person works 80 hours per week.



b. What range of work hours would be an “irrational” choice by the worker ? Why?

It would be irrational to work anything more than 9 or less than or equal to 45 hours. The reason is that the person would receive the same total income for 9 hours of work because between 9 and 45 hours of work, UI benefits are reduced by \$1 for every \$1 earned. There is no incentive to increase work hours beyond 9 unless the person is going to work somewhere beyond 45 hours per week.

c. Suppose that the UI system was changed in the following manner: The person can earn up to 25 percent of the WBA before any reduction in benefits (same as before), but for every dollar earned over the 25 percent exemption, the worker would lose \$.50 of benefits (instead of a dollar of benefits). **Draw the effect of this new rule on the budget line (use a dashed line to indicate the new budget constraint).**

The dashed budget line illustrates the new budget line.

d. For a person who was originally earning exactly 25% of the WBA, what are the income and substitution effects of the new rule on work hours?

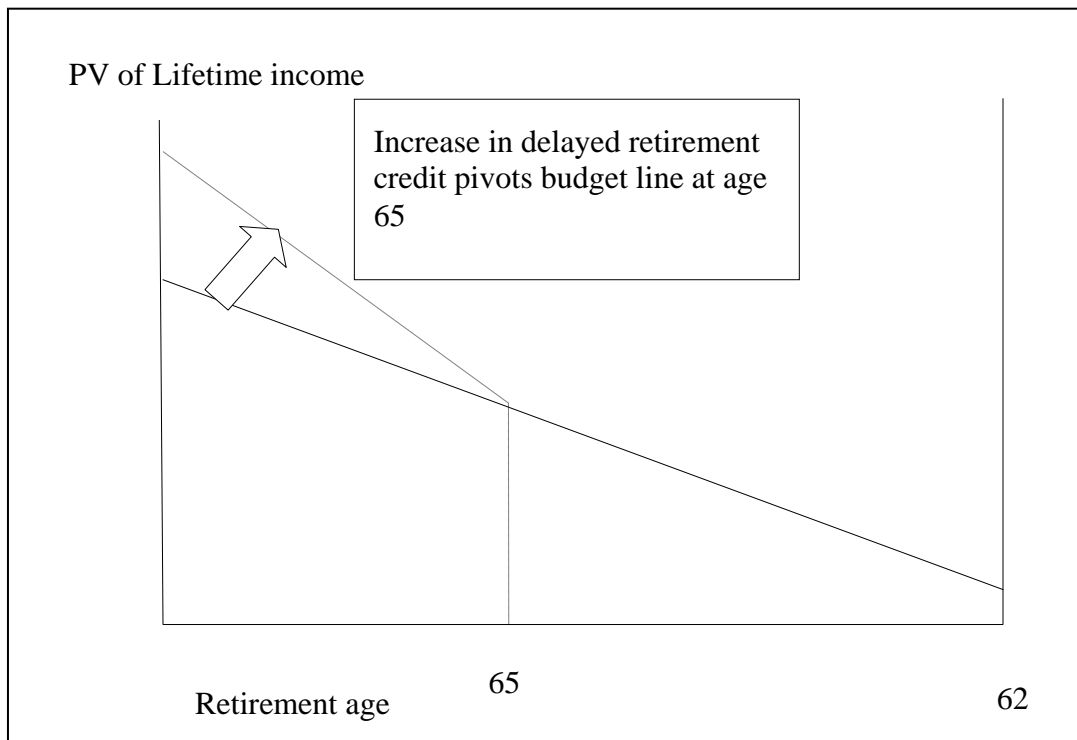
There is no income effect because the person's total income at 9 hours is unchanged by the new rule. The substitution effect encourages the person to work more because the marginal reward to increased work hours increased from \$0 to \$5.

e. For a person who was working 40 hours per week at \$10 per hour, what are the income and substitution effect on work hours?

This person is faced with both income and substitution effects. The income effect is that the new rule increases the person's total income (as seen by the upward shift in the budget constraint at 40 hours) and thus reduces work hours. The substitution effect is that the marginal reward to increased work hours increased (as seen by the increased steepness of the budget line at 40 hours) which encourages the person to work more hours. The net effect on work hours thus depends on whether the income or substitution effect is greater.

2. (15 points) The Social Security system has been gradually increasing the “delayed retirement” credit. For people born prior to 1917, each year that they postponed retirement beyond age 65, their annual Social Security benefit would be increased by 1 percent. For people born after 1943, postponing retirement by a year would increase benefits by 8 percent. Assume that the increase in the delayed retirement credit had no effect on the benefit that a person would receive if they retire between ages 62 and 65.

a. Draw a budget line and illustrate the effect of this increase in the delayed retirement credit on the budget line. Be sure to carefully label your axes, illustrate the link between age 65 and the budget line, and clearly label how the budget line changes when the delayed retirement credit increases.



b. Suppose that prior to the increase in the delayed retirement credit, John was planning to retire at age 67. Discuss how the increase in the delayed retirement credit will likely affect John’s decision of when to retire. To receive credit for this, you must discuss whether there are wealth and/or substitution effects, the direction of those effects, and the net effect on John’s retirement age.

At a retirement age of 67, the increase in the delayed retirement credit has offsetting effects on the choice of retirement age. The wealth effect is that the increase in the delayed retirement credit results in greater wealth for a retirement at age 67 and thus encourages earlier retirement. The substitution effect is to encourage later retirement because at age 67 the budget line is steeper indicating that the rewards to postponing retirement by a year have increased. The net effect on retirement age is thus ambiguous.

c. Suppose that prior to the increase in the delayed retirement credit, Mary was planning to retire at age 65. Discuss how the increase in the delayed retirement credit will likely affect Mary’s decision of when to retire. To receive full credit for this, you must discuss whether there are wealth and/or substitution effects, the direction of those effects, and the net effect on Mary’s retirement age.

For Mary, there is no wealth effect because for a retirement at age 65 wealth is unchanged. There is a substitution effect, however, because the budget line is steeper and the rewards to postponing retirement have increased. This encourages Mary to retire later. Hence, for Mary, the new rule unambiguously encourages later retirement.

3. (15 points) Some have argued that OSHA is necessary to assure work place safety for workers. Others have argued that it is unnecessary.

a. Based upon the concepts developed in class, explain how a firm could improve its profits by spending money to improve work place safety.

If a firm spends money to reduce risk, the cost of this risk abatement could potentially be offset by reduced labor costs. The reason is that if a firm reduces risk, it can reduce or eliminate any compensating difference that they had to pay to their workers to attract them into the job. Consequently, if the wage savings from paying lower compensating differences exceeds the cost of risk abatement, the firm's profits increase.

b. If OSHA mandates that work place safety be improved, explain how the workers could actually be made worse off? Explain.

The fact that the workers accepted the terms of employment suggests that the compensating difference (wage increase) they received for the risk of the job was greater than or equal to the amount they required to accept the risk. Consequently, all but the marginal worker in the risky job is receiving a rent (i.e. wages above the minimum they were willing to accept). If OSHA mandates that the risk be eliminated, the workers are safer, but they lose the compensating difference they previously received. On net, they are worse off and lose the rents that they previously earned.

c. If OSHA mandates that work place safety be improved, explain how someone other than the firm, its workers or its customers could actually benefit from the improved safety.

In order that someone other than the firm, employees, or customers be negatively impacted, the risks that the worker is exposed to must create some "externalities". Externalities could result from private or social insurance programs because if a worker is injured on the job, the benefits that such programs pay to the worker or the surviving family are paid for by other policy-holders or taxpayers. Consequently, forcing the workplace to be safer can save other people money.

ANSWER SHEET

1 E	13 C
2 D	14 B
3 B	15 D
4 \$625	16 C
5 C	17 B
6 A or B	18 C
7 A	19 B
8 A	20 D
9 A	21 B
10 A	22 D
11 D	23 A
12 \$100 million	