

Economics 150 - Labor Economics Assignment #2 - Answers

Answer the following questions. You may hand-write mathematical answers and diagrams, but ALL text must be typed. I will not mark handwritten answers, they will receive a grade of 0. You **must** defend all answers.

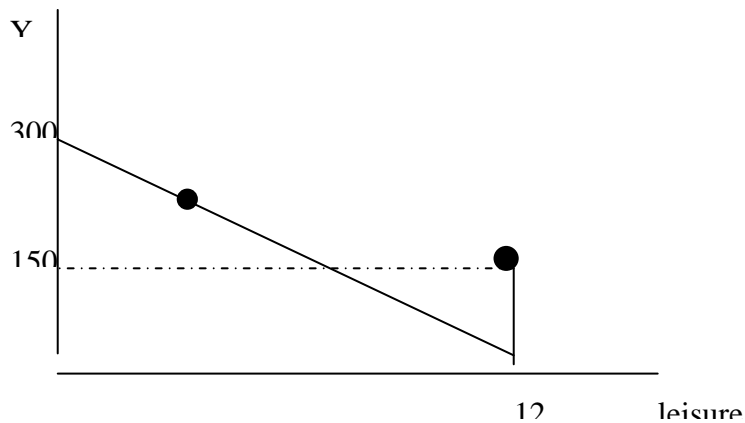
Although this answer key is missing the indifference curves, because they are difficult to draw in word, your answer must have the indifference curve.

Question 1

Big Bird is about to turn 55, at which point he becomes eligible for retirement. He currently earns \$25 per hour and chooses to work 8 hours per day (he can choose to work up to 12 hours).

- (a) If the retirement package offers him \$150 per day if he resigns from Sesame Street should he retire?

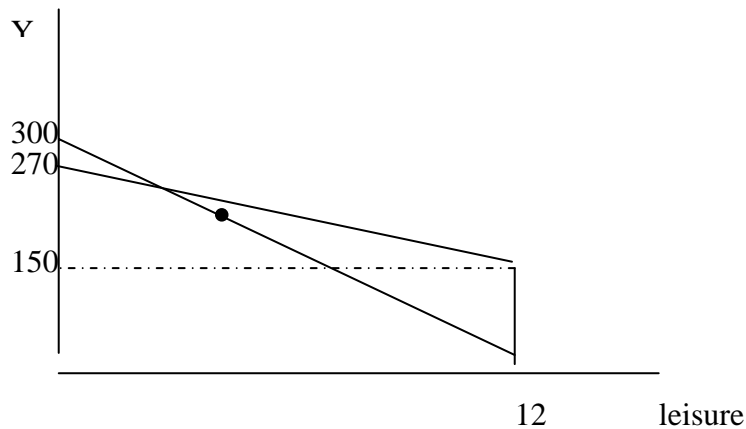
Answer



It depends on his preferences. If he retires he gets 12 hours of leisure and \$150 and if he works he gets \$200 and 4 hours of leisure.

- (b) Alternatively, he could retire from Sesame Street, collect his pension, and become a Greeter at Wal-Mart at an hourly wage rate of \$10. Is this option attractive to Big Bird? If so, will he work more or less than 8 hours? And, why? If not, why not?

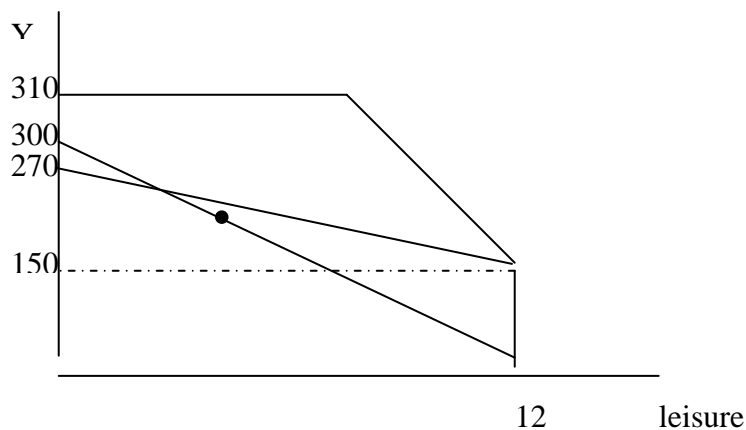
Answer



He will retire and possibly work at Wal-Mart. We know this because the new budget line is above the old budget line for the relevant range. He may retire and not work at all or he may retire and work some hours at Wal-Mart – it depends on his preferences. If he does work at Wal-Mart we know that he will work fewer than 8 hours since the income and substitution effects go in the same direction making him choose more leisure.

- (c) Just before Big Bird has decided what to do, Barney offers Big Bird a minor role on “Barney’s Dinosaur Power Hour.” Barney tells Big Bird that he can choose to work for any amount of time between 0 and 4 hours per day at an hourly wage rate of \$40. Should Big Bird retire from Sesame Street and take Barney up on his offer? If so, how many hours should he choose to work and why? If not, why not?

Answer



He will certainly retire and most likely take Barney up on his offer. It is possible that he just retires and has all leisure. But given the high pay rate offered by Barney it’s more likely that he works between 0-4 hours for Barney. We know with certainty that he won’t work at Sesame Street or Wal-Mart since the potential budget constraint offered by Barney is always above the other two options.

Question 2

The government of Oz institutes the following Earned Income Tax Credit (EITC) program. For every dollar that you earn, up to a maximum of \$10,000, the government will increase your wage by 50%, for a maximum subsidy of \$5,000. For every dollar that you earn above \$10,000 the government reduces the subsidy by \$0.50 until the subsidy hits \$0. Consider a person who earns \$10 per hour. Assume that people can choose between labor and leisure over 16 hours per day (they must sleep for 8 hours).

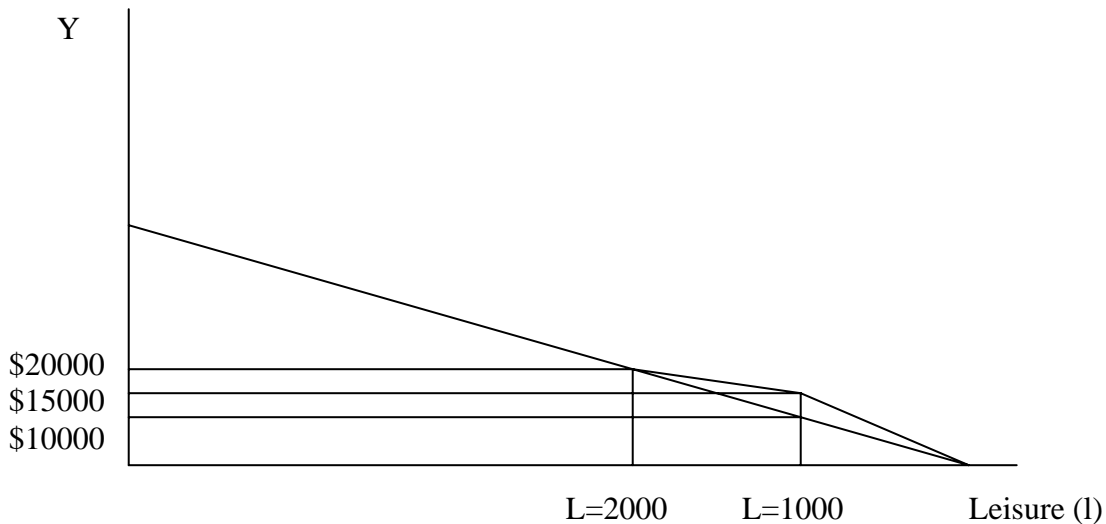
(a) At how many hours of work does the subsidy hit zero?

Answer

$$\text{Maximum Subsidy: } 10 \times 0.50 \times H = 5000 \Rightarrow H = 1000$$

$$\text{Subsidy hits 0: } 10 \times 0.50 \times H = 5000 \Rightarrow H = 1000$$

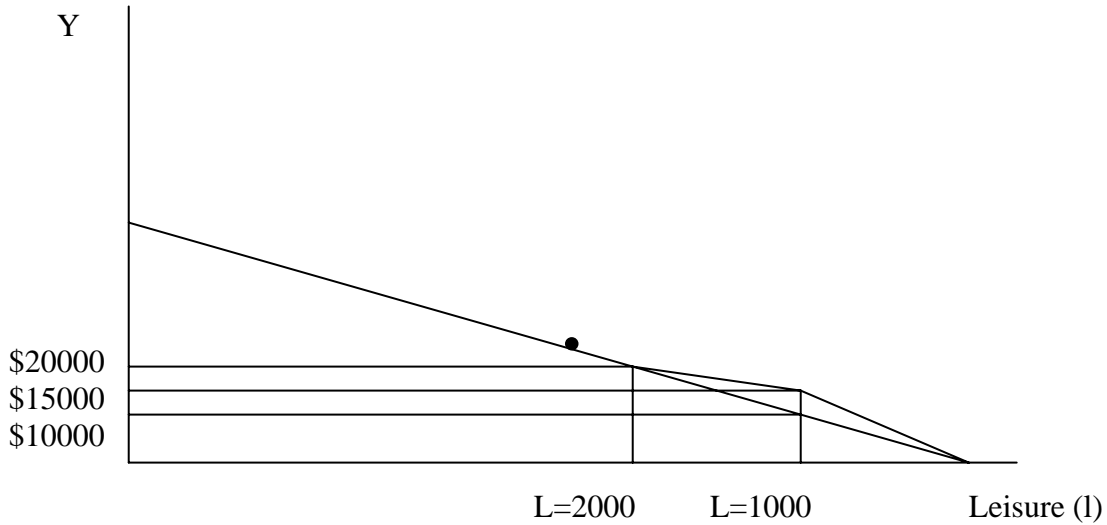
Since you hit the maximum at 1000 hours and then hit zero after another 1000, you hit 0 at 2000 hours in total.



(b) What impact does the EITC program have on the labor supply decision of a person who earns \$10 and choose to work 8 hours per day 5 days a week before EITC was introduced?

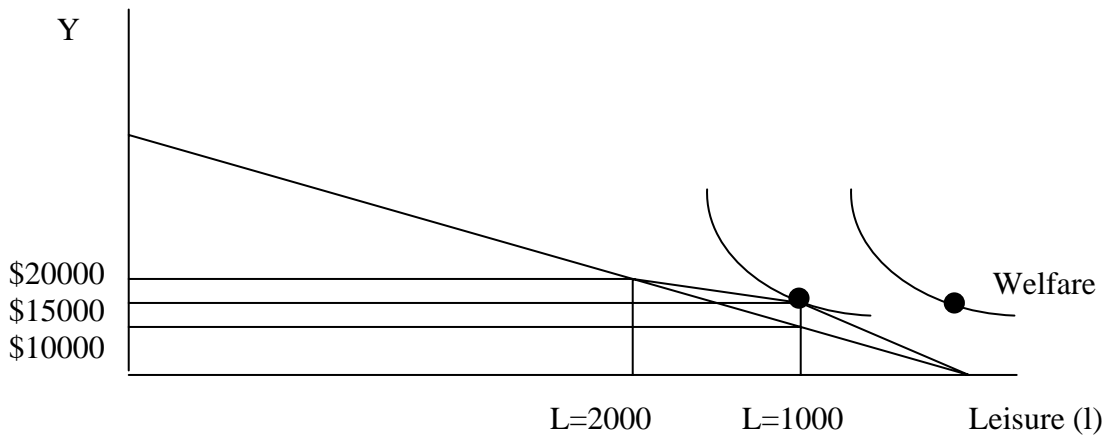
Answer

52 weeks per year, 5 days per week and 8 hours per day is 2080 hours per year. The black dot. Depending on the shape of the individuals indifference curves he will either work fewer hours (between 1000 and 2000 hours depending on his indifference curves) and get EITC or he will work the same hours and not get EITC.



(c) For a person earning \$10 per hour who chooses to work 1000 per year under EITC, what impact does the institution of welfare at \$1250 per month have on the hours of work per year that he chooses to supply?

Answer



On EITC he gets \$15000 and on welfare he gets \$15000. On welfare he also gets more hours of leisure thus he will quit working and go on welfare.

Question 3

Sally's budget line will have kinks at gross income levels of \$10,000, \$40,000, and \$60,000. As her wage is \$25 per hour, these kinks occur after 400 hours, 1,600 hours, and 2,400 hours of work respectively, or, similarly, at 2,720, 1,520, and 720 hours of leisure.

- From 0 to 400 hours, Sally's after-tax wage is \$22.50 (90 percent of \$25). If she works exactly 400 hours, her after-tax income is \$9,000.
- From 400 to 1,600 hours, Sally's after-tax wage is \$16.25 (65 percent of \$25). If she works exactly 1,600 hours, her after-tax income is $\$9,000 + \$16.25(1600-400) = \$28,500$.
- From 1,600 to 2,400 hours, Sally's after-tax wage is \$18.75 (75 percent of \$25). If she works exactly 2,400 hours, her after-tax income is $\$28,500 + \$18.75(2400-1600) = \$43,500$.
- From 2,400 to 3,120 hours, Sally's after-tax wage is \$12.50 (50 percent of \$25). If she works exactly 3,120 hours, her after-tax income is $\$43,500 + \$12.50(3120-2400) = \$52,500$.

