Chapter 4

Harder Problems
Most students will find problems 27 and 28 more challenging than the preceding
problems.

27. Suppose you have 24 hours per day that you can allocate between leisure
and working at a wage of $2 per hour.
   a. Draw your budget constraint between “leisure hours” on the horizontal axis and “income” on the vertical.
   b. Draw in your optimum point. Keeping in mind that the number of hours you spend working is equal to 24 minus the number of hours that you spend at leisure, plot a corresponding point on your labor supply curve.
   c. Now suppose that the wage rate rises to $3 per hour. Draw your new budget constraint, your new optimum, and a new point on your labor supply curve.
   d. On your indifference curve diagram, decompose the effect of the wage increase into a substitution effect and an income effect. What is the direction of the substitution effect? What is the direction of the income effect if leisure is a normal good? What is the direction of the income effect if leisure is an inferior good?
   e. True or False: If leisure is an inferior good, the labor supply curve must slope upward, but if leisure is a normal good, the labor supply curve could slope either direction.
   f. Whose labor supply curve is likely to slope upward more steeply: somebody whose income is derived entirely from wages, or somebody who has a large nonwage income? Why?

28. Suppose you have $1,000 today and expect to receive another $1,000 one year from today. Your savings account pays an annual interest rate of 25%, and your bank is willing to lend you money at that same interest rate.
   a. Suppose that you save all of your money to spend next year. How much will you be able to spend next year? How much will you be able to spend today?
   b. Suppose you borrow $800 and spend $1,800 today. How much will you be able to spend next year?
   c. Draw your budget constraint between “spending today” and “spending next year.” What is its slope? How does the slope reflect the relative price of spending today in terms of spending next year?
   d. How would your budget line shift in each of the following circumstances:
      You find $400 that you’d forgotten was in your desk drawer.
      Your boss informs you that you will receive a $500 bonus next year.
      The interest rate rises to 50%.
   e. Under which circumstance would you spend more today: finding a forgotten $400 in a desk drawer or being told that you will receive a $500 bonus next year? Under which circumstance would you spend more next year?
   f. Returning to the assumption that you have $1,000 today and expect to receive $1,000 next year, suppose that you choose neither to borrow nor to lend. Illustrate the tangency of your budget line with an indifference curve.