

For each of the following, assume that the maximum hours of labor or leisure per day is 16, and that indifference curves satisfy all of our usual assumptions, unless otherwise noted. Label all diagrams carefully.

1. Brenda is paid \$20 per hour and has nonlabor income of \$40 per day from her investments.
 - a. Draw her budget constraint.
 - b. Identify the point on her budget constraint if she chooses to work 10 hours per day. How much will her total daily income be at that point?
 - c. Her boss has just given her a pay cut, bringing her down to \$15 per hour. Show how this affects her budget constraint.

2. Leonard lives with his mom. She pays him the equivalent of \$80 a day in free rent and spending money. Until recently, if he worked, he could earn \$12 per hour, but he chose not to work. The other day, his uncle Ted offered him a job at \$20 per hour. Leonard decided to work 4 hours a day for his uncle.
 - a. Draw Leonard's budget constraint before the job offer from his uncle. Where did he choose to consume on his constraint? Label that point A.
 - b. Now on the same diagram add his budget constraint after the job offer from his uncle, and label his choice B. Sketch in indifference curves that are consistent with his choices before and after the job offer.
 - c. Suppose Leonard's mom heard about the job with Uncle Ted and said the following: "If you keep working for that creep I'll kick you out of the house and won't give you a red cent!" Show how this action by his mother would affect Leonard's budget constraint. If Leonard decided to keep the job with his uncle and forego the support from Mom, would he choose to work more than 4, less than 4, or exactly 4 hours a day for his uncle? Explain carefully.

3. Shirley earns all her income from paid labor. She recently received a raise from \$8 an hour to \$16 an hour, and chose to decrease her work hours from 10 hours per day to 5 hours per day.
 - a. Has her daily income changed?
 - b. Draw her budget constraints before and after the wage change on a single diagram.
 - c. Sketch in indifference curves for her choices, and show the *substitution and income effects* of the wage increase. What are the directions of these effects on her work hours?

4. "For many individuals, the labor supply curve is perfectly inelastic. That is, when the wage changes, they don't change their work hours at all. Therefore, leisure *cannot* be a normal good."

Do you agree or disagree with this quote? Explain. As part of your answer, use a diagram showing the substitution and income effects of a change in the wage rate for a person whose supply of hours is perfectly inelastic.