Chapter 7 Exercises

Self-Check Questions

1. What happens to the budget constraint when income increases? What happens when income decreases?
2. What does the marginal rate of substitution measure?
3. What is diminishing marginal utility?
4. Explain why individuals have unique indifference curves.
5. What is the shape of an indifference curve? What does that tell you?

Review Questions

6. What point is preferred along an indifference curve?
7. Why do indifference curves slope down?
8. Why are indifference curves steeper on the left and flatter on the right?
9. How many indifference curves does a person have?
10. What is the substitution effect?
11. What is the income effect?
12. How can you tell which indifference curves represent higher or lower levels of utility?
13. Does a change in price have both an income effect and a substitution effect? Does a change in income have both an income effect and a substitution effect?
14. Which is larger, the income effect or the substitution effect?

Critical Thinking Questions

15. Does the income effect involve a change in income? Explain.
16. Would you expect, in some cases, to see only an income effect or only a substitution effect? Explain.
17. How do indifference curves apply when you are making intertemporal choices?
18. How would you graph a sudden increase in budget? Does this affect your utility-maximizing point? Why or why not?
19. Why is the utility-maximizing point always the point where an indifference curve is tangent to the budget constraint?

Problems

20. Recall the example that discusses Lilly's tradeoff between her two favorite relaxation activities: eating doughnuts and reading paperback books. Suppose the price of paperback books increases to $15 and the price of doughnuts stays at $1. Her total budget is $120.

a. Graph her budget constraint placing books on the *x*-axis.

b. Lilly chooses to buy 4 books and 60 doughnuts. Label this decision as Point *A* on your graph. Next, draw an indifference curve labeled U_1 that reflects this decision.

c. Plot any other point along this indifference curve and label it Point *B*. Discuss if Point *B* is an achievable purchase decision for Lilly and what her preference is for Point *B* versus Point *A*.

d. Draw two more indifference curves, one labeled U_2 that is beyond Lilly's budget constraint and one labeled U_3 that is affordable but not desirable.

21. Chelsea is indifferent between Option A of receiving 15 brownies and 14 cookies and Option B of 17 brownies and 10 cookies. What is Chelsea's marginal rate of substitution of brownies in place of cookies moving from Option A to Option B?

22. Ezra currently has $12,000 saved. He is trying to decide whether to use it today as a down payment on a used car or to wait four years, during which he can earn a 25% rate of return for the entire four-year period. If he waits four years, he will have a larger down payment so that he can purchase a new electric car.

a. If Ezra saves the entire amount, how much will he earn in interest? How much will he have available for consumption in four years?

b. If Ezra spends $2,000 now, how much will he earn as his rate of return? How much will he have available for consumption in four years?