



Chapter 6 Exercises

Self-Check Questions

- Jeremy is deeply in love with Jasmine. Jasmine lives where cell phone coverage is poor, so he can either call her on the phone for \$0.10 per minute, or he can drive to see her at a round-trip cost of \$4 in gasoline money. He has a total of \$20 per week to spend on staying in touch. To make his preferred choice, Jeremy uses a handy utilimometer that measures his total utility from personal visits and phone minutes. Using the values in the following table, determine the points on Jeremy's consumption choice budget constraint (it may be helpful to do a sketch) and identify his utility-maximizing point.

Round Trips	Total Utility	Phone Minutes	Total Utility
0	0	0	0
1	80	20	200
2	150	40	380
3	210	60	540
4	260	80	680
5	300	100	800
6	330	120	900
7	200	140	980
8	180	160	1,040
9	160	180	1,080
10	140	200	1,100

- Take Jeremy's total utility information in Question 1, and use the marginal utility approach to confirm the choice of phone minutes and round trips that maximizes Jeremy's utility.
- Explain all the reasons why a decrease in a product's price would lead to an increase in purchases.
- As a college student, you work a part-time job, but your parents also send you a monthly allowance. Suppose one month, your parents forget to send the check. Show graphically how your budget constraint is affected. Assuming you only buy normal goods, what would happen to your purchases of goods?

Review Questions

5. Who determines how much utility an individual will receive from consuming a good?
6. Would you expect total utility to rise or fall with additional consumption of a good? Why?
7. Would you expect marginal utility to rise or fall with additional consumption of a good? Why?
8. Is it possible for total utility to increase while marginal utility diminishes? Explain.
9. If people do not have a complete mental picture of total utility for every level of consumption, how can they find their utility-maximizing consumption choice?
10. What is the rule relating the ratio of marginal utility to prices of two goods at the optimal choice? Explain why, if this rule does not hold, the choice cannot be utility-maximizing.
11. As a general rule, is it safe to assume that a change in the price of a good will always have its most significant impact on the quantity demanded of that good rather than on the quantity demanded of other goods? Explain.
12. Why does a change in income cause a parallel shift in the budget constraint?

Critical Thinking Questions

13. Think back to a purchase that you made recently. How would you describe your thinking before you made that purchase?
14. The rules of politics are not always the same as the rules of economics. In discussions of setting budgets for government agencies, there is a strategy called “closing the Washington Monument.” When an agency faces the unwelcome prospect of a budget cut, it may decide to close a high-visibility attraction enjoyed by many people (like the Washington Monument). Explain in terms of diminishing marginal utility why the Washington Monument strategy is so misleading. (*Consider:* if you are really trying to make the best of a budget cut, should you cut the items in your budget with the highest marginal utility or the lowest marginal utility? Does the Washington Monument strategy cut the items with the highest marginal utility or the lowest marginal utility?)
15. Income effects depend on the income elasticity of demand for each good that you buy. If one of the goods you buy has a negative income elasticity (that is, it is an inferior good), what must be true of the income elasticity of the other good you buy?

Problems

16. Praxilla, who lives in ancient Greece, derives utility from reading poems and eating cucumbers. Praxilla gets 30 units of marginal utility from her first poem, 27 units of marginal utility from her second poem, 24 units of marginal utility from her third poem, and so on, with marginal utility declining by 3 units for each additional poem. Praxilla gets 6 units of marginal utility for each of her first 3 cucumbers consumed, 5 units of marginal utility for each of her next 3 cucumbers consumed, 4 units of marginal utility for each of the following 3 cucumbers consumed, and so on, with marginal utility declining by 1 for every 3 cucumbers consumed. A poem costs 3 bronze coins, but a cucumber costs only 1 bronze coin. Praxilla has 18 bronze coins. Sketch Praxilla's budget set between poems and cucumbers, placing poems on the vertical axis and cucumbers on the horizontal axis. Start off with the choice of 0 poems and 18 cucumbers, and calculate the changes in marginal utility of moving along the budget line to the next choice of 1 poem and 15 cucumbers. Using this step-by-step process based on marginal utility, create a table and identify Praxilla's utility-maximizing choice. Compare the marginal utility of the two goods and the relative prices at the optimal choice to see if the expected relationship holds. (*Hint*: label the table columns: 1) Choice, 2) Total Utility, 3) Marginal Gain from More Poems, 4) Marginal Loss from Fewer Cucumbers, 5) Overall Gain or Loss, 6) Is the previous choice optimal? Label the table rows (underneath the column titles): 1) 0 poems and 18 cucumbers, 2) 1 poem and 15 cucumbers, 3) 2 poems and 12 cucumbers, 4) 3 poems and 9 cucumbers, 5) 4 poems and 6 cucumbers, 6) 5 poems and 3 cucumbers, 7) 6 poems and 0 cucumbers.)
17. If a 10% decrease in the price of one product that you buy causes an 8% increase in quantity demanded of that product, will another 10% decrease in the price cause another 8% increase (no more and no less) in quantity demanded?