

Microeconomic Analysis - Problem Set #4

Ryan Safner

Spring 2018

Concepts and Critical Thinking

Please answer the following questions briefly (1-3 sentences). Use examples as necessary. Be sure to label graphs fully, if appropriate.

1. Under what conditions can the law of demand be violated (however theoretical)?

2. Describe, in your own words, the (i) price effect, (ii) real income effect, and (iii) substitution effect from a price change.

3. Graphically illustrate the income and substitution effects from a decrease in price for a normal good.

4. Suppose that, holding prices constant, Alice has preferences over the number of books she purchases, illustrated in the table below. Draw a smooth approximation of Alice's

Income (\$1000s)	Optimal # Books Bought
5	5
10	6
15	20
20	25
25	26
30	10
35	9
40	8
45	7
50	6

Engel curve for books, indicating the ranges over which books are inferior goods and over which they are normal goods.

Quantitative Applications

Show all work for calculations—you may lose points, even if correct, for missing work. Be sure to label graphs fully, if appropriate.

5. Steve spends his disposable income on meals at restaurants (r) and paperback novels (n). His usual restaurant meal costs \$25, and paperback books cost \$8. When Steve's monthly income is \$240, he goes out to eat 8 times and purchases 5 books. When his income rises to \$282, he goes out to eat 10 times and purchases 4 books. Calculate the income elasticity for each good, and determine what kind of good it is (inferior, normal necessity, or normal luxury).

6. Kendra buys eggs (e), bagels (b), and coffee (c) for breakfast for the week.
- (a) When eggs are \$2/carton, she buys 5 bagels. When the price of eggs falls to \$1/carton, she buys 4 bagels. Find the cross-price elasticity between eggs and bagels. Are they complements or substitutes for Kendra?
 - (b) When eggs are \$2 carton, she buys 3 cups of coffee. When the price of eggs falls to \$1/carton, she buys 6 cups of coffee. Find the cross-price elasticity between eggs and coffee. Are they complements or substitutes for Kendra?