

Problem Set 3

Comparative Statics of Demand

1. Good 1 is a normal good, Good 2 is an inferior good. Using 3 budget lines and 2 indifference curves, illustrate the effect of an **increase in p_2** on the consumption of both x_1 and x_2 . Label income and substitution effects for both goods.
2. Holding all else constant, if good 1 is normal and its price p_1 rises, then quantity consumed of good 1, x_1 , must fall. True or False, and explain.
3. Holding all else constant, if good 1 is normal and the price of good 2 (p_2) rises, then quantity consumed of good 1 (x_1) must A) rise, B) fall, C) stay the same, or D) Can't tell. Choose which is true and explain.
4. My demand functions for goods 1 and 2 are $x_1(p_1, p_2, I)$ and $x_2(p_1, p_2, I)$. If
 $x_1(2,5,90) = 20$ $x_2(2,5,90) = 10$ and $x_1(4,10,170) = 15$ $x_2(4,10,170) = 11$
can you say anything about how I would rank the commodity bundles (20, 10) and (15, 11)?
5. If a consumer only consumes two commodities, x_1 and x_2 , if x_2 is an inferior good, and if p_1 rises, do the resulting income and substitution effects on good 2 work in the same direction as each other, or in opposite directions from each other?
6. Draw and label a **compensated** price change in p_L if my utility is given by $u(x_L, x_R) = \min [x_L, x_R]$.
7. Draw and label the **compensated** (Hicksian) demand curve for left shoes (good x_L) if my utility is given by $u(x_L, x_R) = \min [x_L, x_R]$.
8. Goods 1 and 2 are complements. Using 3 budget lines and 2 indifference curves illustrate the effect of a **decrease in p_1** (the price of the first good) on the consumption of good x_2 (the second good). Show and label the income and substitution effects.
9. A consumer consumes only 2 goods, x_1 and x_2 . Can both be inferior?
If so, use 2 indifference curves and 2 budget lines to show the effects of an increase in I on consumption of good 1 and good 2.
If not, draw the same graph, and show how the consumption bundle chosen after the increase in I would have to be in 2 different places.