

Due: Wednesday, 10/9/02

1. Suppose a two-good world. (a) Is it possible for X to be a gross substitute for Y but for Y to be a gross complement for X? Illustrate your answer using indifference curves. (b) If Y and X are gross complements, will they be net substitutes or net complements? Explain.

2. TFUE: In a two-good world, suppose that good X is inferior and good Y is normal. Then the cross-price elasticity of good X with respect to the price of Y is larger than that of good Y with respect to the price of X.

3. TFUE: Goods that make up only a small part of the household's budget are more likely to have inelastic Marshallian demand curves.

4. TFUE and illustrate your answer: A Laspeyres price index will always overstate the effects of inflation on consumer welfare. Hint: Analyze the budget constraints of an individual whose nominal income is adjusted so that they can buy last year's bundle of X and Y at this year's prices.

5. TFUE: Suppose a two-good world. If X is a luxury good and X and Y are gross substitutes, then the demand for X is inelastic.

6. Lord Peter Pommy is a distinguished criminologist, schooled in the latest techniques of forensic revealed preference. Lord Peter is investigating the disappearance of Sir Cedric Pinchbottom who abandoned his aging mother on a street corner in Liverpool and has not been seen since. Tireless research has revealed that Sir Cedric has left England and is living under an assumed name somewhere in the Empire. Lord Peter has three possibilities. These are R. Preston McAfee of Brass Monkey, Ontario, Canada, Richard Manning of North Shag, New Zealand, and Richard Stevenson of Gooley Shoes, Falkland Islands. Which of these is Sir Cedric? Lord Peter has obtained Sir Cedric's diary in which were recorded his consumption habits in minute detail. By careful observation, he has also been able to determine the consumption behavior of McAfee, Manning, and Stevenson. All three of these worthies, like Sir Cedric, spend their entire incomes on beer and sausage. Their dossiers reveal the following:

- Sir Cedric Pinchbottom - In the year before his departure, Sir Cedric consumed 10 kilograms of sausage and 20 liters of beer per week. At that time, beer cost 1 English pound per liter and sausage cost 1 English pound per kilogram.
- R. Preston McAfee - McAfee is known to consume 5 liters of beer and 20 kilograms of sausage. In Ontario, beer costs 1 Canadian dollar per liter and sausage costs 2 Canadian dollars per kilogram.
- Richard Manning - Manning consumes 5 kilograms of sausage and 10 liters of beer per week. In New Zealand, a liter of beer costs 2 New Zealand dollars and sausage costs 2 New Zealand dollars per kilogram.
- Richard Stevenson - Stevenson consumes 5 kilograms of sausage and 30 liters of beer per week. In Gooley Shoes, a liter of beer costs 10 Falkland Island pounds and sausage costs 20 Falkland Island pounds per kilogram.

(a) For each of the three fugitives, use a different color of ink to draw his budget line and label the consumption bundle he chooses. On this graph, superimpose Sir Cedric's budget line and his choice.

(b) After pondering the dossiers for a few minutes, Lord Peter announced, "Unless Sir Cedric has changed his tastes, I can eliminate one of the suspects. Revealed preference tells me that one of the suspects is innocent." Which one?

(c) After thinking a bit longer, Lord Peter announced, "If Sir Cedric left voluntarily, then he would have to be better off than he was before. Therefore if Sir Cedric left voluntarily and if he has not changed his tastes, he must be living in _____."