

Economics 500: Microeconomic Theory  
State University of New York at Binghamton  
Department of Economics  
Fall, 2004

Midterm

The exam is worth 100 points. Each question is of equal value.

1. Consider a group of people (A, B, C) and the relation “strictly taller than.” Is this relation transitive? Is it reflexive? Explain briefly.
2. True or False (Explain briefly and use an example and/or state assumptions if necessary)?
  - (a) Whenever income and prices of all goods change, the optimal consumption bundle changes.
  - (b) When the interest rate rises, a borrower will become a lender.
3. True or False (Explain briefly and use an example and/or state assumptions if necessary)?
  - (a) If, for every possible price, the quantity demanded of a commodity at that price is greater in market A than in market B, then the price elasticity of demand for the commodity is necessarily more elastic in market A than in market B.
  - (b) On a non-linear demand curve, constant price elasticity is impossible.
4. Suppose that a budget equation is given by  $p_1x_1 + p_2x_2 = I$ . The government decides to impose a lump-sum tax of  $u$ , a quantity tax on good 1 of  $t$ , and a quantity subsidy on good 2 of  $s$ . What is the formula for the new budget line? Is this consumer worse off than he/she was before (if necessary, show with a graph)?
5. An increased price in movie theatre tickets causes Zach’s consumption of popcorn to decrease, but leaves his consumption of movies unchanged. How can this be? Explain briefly using a graph and the concepts of income and substitution effects?
6. In a two good economy  $(x_1, x_2)$ , when prices are  $(p_1, p_2) = (1, 2)$  a consumer demands  $(x_1, x_2) = (2, 4)$ , and when prices are  $(p_1, p_2) = (2, 4)$  the consumer demands  $(x_1, x_2) = (1, 3)$ . Can we conclude anything about utility maximization here? Explain briefly.
7. A Rawlsian welfare function counts only the welfare of the worst off agent. The opposite of the Rawlsian welfare function might be called the “Nietzschean” welfare function – a welfare function that says the value of an allocation depends only on the welfare of the best off agent. What mathematical form would the Nietzschean welfare function take? What kind of allocations represent welfare maxima of the Nietzschean welfare function?