

EC 205, Fall 2003
Homework #6: Due Tue. October 14

1. Suppose there are two consumers in an economy. Consumer 1 has utility function $u_1(x_1, x_2) = \min\{5x_1, x_2\}$ and consumer 2 has utility function $u_2 = \min\{x_1, 5x_2\}$. Normalize the price of commodity 1 to 1, and let p_2 denote the price of commodity 2. Suppose the wealth of consumer 1 is p_2 and the wealth of consumer 2 is 1 (for all values of p_2). [This could be explained by the fact that consumer 1's wealth is derived from his endowment $(0, 1)$ and consumer 2's wealth is derived from endowment $(1, 0)$.]

Derive the demand functions of the consumers (as functions of p_2). What is the aggregate demand for $p_2 = 1/5$ and for $p_2 = 5$? Does aggregate demand satisfy the weak axiom? Draw a figure with the two aggregate budget lines to illustrate the answer. Provide a verbal explanation of this phenomenon in terms of the relative wealth of the two consumers and the corresponding relative level of aggregate demand for the two commodities (at the two given values of p_2).

2. Exercise 4.B.1.
3. Exercise 5.B.2.
4. Prove that if preferences are homothetic, then the income elasticity of each commodity is 1.