Problem (set) 1. Due in class Jan 20

January 13, 2015

Suppose that there are 3 securities, $x_1$, $x_2$ and $x_3$. These have payoffs (1,1), (1,2) and (2,3), respectively. Portfolios consist of $x_1$ and either $x_2$ or $x_3$, or neither, or both. Securities 1 and 2 have price 2. The price of security 3 is either 4 or 5. This characterization of assets defines 6 distinct economies.

For each of these economies answer the following questions:

1. Do there exist redundant securities?
2. Are markets complete?
3. Is the Law of One Price satisfied?
4. Does there exist weak arbitrage?
5. Does there exist arbitrage?