

Advanced Microeconomic Analysis

Homework #3, due May 15

Q1-6) In Jehle & Reny, do the following problems: 4.20, 4.22, 5.4, 5.5, 5.11, 5.18

Q7) Suppose there are two consumers $i = 1, 2$ with utility function over wealth $u(w) = \ln(w)$. There are two time periods $t = 1, 2$. At $t = 2$, there are two possible outcomes:

- $s = 1$: with probability p , consumer i will receive an income of w_1^i .
- $s = 2$: with probability $1 - p$, consumer i will receive an income of w_2^i .

Both consumers want to maximize their expected utility over wealth at $t = 2$. At $t = 1$, there are two goods that consumers can trade with each other: Arrow securities that pay out $(1, 0)$ and $(0, 1)$ respectively, where the first number is the payoff in outcome $s = 1$, and the second number is the payoff in outcome $s = 2$. Suppose $(w_1^1, w_2^1) = (1, 3)$, $(w_1^2, w_2^2) = (3, 1)$. For each value of p , find the equilibrium prices for each Arrow security and equilibrium allocation of wealth across outcomes.

(a) Suppose $p = 1/2$.

(b) Suppose $p = 1/3$.