

Micro I Final, April 22, 2008

You have 2 hours to complete this exam. Answer all five questions. You may use results covered in class, the textbook, or your homework to answer the questions. To insure maximum credit, be sure to explain your answers. Each question is worth 30 points, for a total of 150 points. The problems are not equally hard. Good luck!

1. Consider a two-person, two-good exchange economy. Consumer 1 has endowment $(4, 2)$ and utility $u_1(x_1, x_2) = x_1 + x_2$. Consumer 2 has endowment $(2, 4)$ and utility $u_2(x_1, x_2) = x_1 + \ln x_2$.
 - a) Find all Pareto optima.
 - b) Find the core.
 - c) Find all Walrasian equilibria.
2. Suppose the expenditure function is $e(p, \bar{u}) = 2\bar{u}\sqrt{p_1 p_2}$.
 - a) Find the Hicksian demands.
 - b) Find the indirect utility function.
 - c) Find the original utility function.
3. Consider a two-agent, two-good economy production economy where utility is $u_1(x_1, x_2) = (x_1)^{1/2}(x_2)^{1/2}$ and $u_2(x_1, x_2) = \sqrt{x_1} + \sqrt{x_2}$. Endowments are $\omega^1 = (3, 0)$ and $\omega^2 = (4, 1)$. There is one firm with production set $Y = \{(y_1, y_2) : y_1 \leq 0, y_2 \leq -y_1/2\}$. Find the equilibrium prices, equilibrium demands by individuals, and the firm's equilibrium net output.
4. Suppose a consumer has discount factor $0 < \delta < 1$ and period utility function $u(c) = \ln c$. The consumer has wealth $W > 0$ and faces prices $p_t = p > 0$ for all times t . Find the optimal consumption path.