

This exam is organized into four sections, one for each quarter. Each section includes a short answer question and a longer, in-depth question.

1 Part A: Consumer and Producer Theory. (Pape)

1. Consider the following utility function over two goods:

$$u(x; y) = \ln(x) + (10 - y)^2$$

- (a) Are the preferences which correspond to this utility function transitive? Continuous? Monotonic? Explain each in turn.
- (b) Evaluate the following claim: y is a normal good. Is that claim always, never, or sometimes true? Explain *carefully*.
2. Suppose there are two people, A and B , who live in the same household. There are two goods: leisure l and premium cable TV packages x . A and B are each endowed with the number of hours $H > 1$ which they can allocate toward working or leisure; each hour that person

2 Part B: Game Theory. (Pape)

3. Consider an $N >$

4 Part D: General Equilibrium. (Tonguc)

7. Consider an exchange economy with two identical consumers, $i = A, B$. Their common utility function is $u_i(x_1; x_2) = x_1 x_2^{\alpha}$ for $0 < \alpha < 1$. There are 10 units of x_1 and 10 units of x_2 in the economy. Find endowments $!_A$ and $!_B$, where $!_A \neq !_B$ and Walrasian equilibrium prices that will support the allocation $((5; 5); (5; 5))$.

8. Imagine a three consumer economy ($i=A,B,C$) in which the first commodity is gardening services (x), the consumption of which makes one's yard more beautiful, and the second good is food (f). Suppose that two of the consumers (A and B) in this economy live in adjacent houses, while the third consumer lives on the other side of a large mountain. Consumption of gardening services of