

MIDTERM EXAMINATION

DIRECTIONS: Obey page limits. If a question has multiple parts, indicate exactly where you answer each part. Be sure to follow the directions for each section of this exam.

DEFINITIONS: (6 POINTS EACH) ANSWER ALL DEFINITIONS. Carefully define the following terms. Whenever possible, give both mathematical and verbal definition.

A page limit of one page per definition will be strictly enforced.

1. Asymmetric Subrelation
2. Weak Axiom of Revealed Preference
3. Choice Function
4. Walrasian Demand
5. Transitivity
6. Negative Transitivity

SHORT ANSWER: (30 POINTS EACH) DO THE FIRST QUESTION AND TWO MORE FOR A TOTAL OF THREE (3) QUESTIONS.

1. What is the relationship between WARP, SARP, HARP, and GARP when the domain of choice is budget sets? What is the relationship between WARP, SARP, HARP, and GARP when the domain of choice is a T-domain? (Explain in detail, defining all terms.)
2. Give an intuitive proof that a continuous, monotone preference ordering has a utility representation. (Make the intuition as rigorous as possible.)
3. Let \succ be an asymmetric and negatively transitive binary relation defined on a set X . Following Kreps, define $c(A, \succ) = \{x \in X \mid \forall y \in X, \neg y \succ x\}$. Prove $c(A, \succ)$ is not empty for all finite, nonempty $A \subseteq X$.
4. Consider a menu-independent choice function $C(\cdot)$ with associated menu-independent weak revealed preference \hat{R}_C . Show that choice is representable by \hat{R}_C . [Do not assume without proof that a menu-independent choice function satisfies WARP.]
5. Kreps offers the following hypothetical budget data: $p_1 = (10, 10, 10)$, $x_1 = (10, 10, 10)$, $p_2 = (10, 1, 2)$, $x_2 = (9, 25, 7.5)$, $p_3 = (1, 1, 10)$, $x_3 = (15, 5, 9)$. Construct the direct revealed preference matrix for these budget data. Are the data consistent with neoclassical consumer theory? (Explain in detail.)
6. Prove the Law of Compensated Demand. (Be clear about the assumptions you use.)
7. Show that a consumer who follows the minimax-regret rule can pose problems for empirical consumer theory. What lessons should the applied economist draw from this example?

END OF EXAM