AMT F2015 Final Exam Retake

Complete as much of each question as possible. The exam will be graded on a curve. Good Luck!

1. **Choice Theory (10)** The consumption space of an agent is $\mathbb{R}^2_+$. For each property below, on separate figures, show graphically an example of TWO preference relations; one that **satisfies** the property and one that does **NOT** satisfy the property. Clearly indicate indifference curves (if there are any), direction of increasing preferences, points of intersection, etc.

   (a) monotonicity

   (b) transitivity

   (c) convexity

   (d) quasi-linear *in the second good*

   (e) local non-satiation

2. **Choice Theory (10)** Let $X = \{apple, orange, banana, 250g\ lingonberries\}$ be a set of available fruits in Alepa.

   (a) I have the following procedure when faced with each possible subset of fruits:

   if faced with *round* fruits (apple, orange, lingonberries), then I choose apple,

   if faced with fruits I have to peel (orange, banana), then I choose banana,

   for each other possible set of fruits, I choose orange.

   Does my procedure satisfy WARP? Give an example if not.

   (b) State the Independence of Irrelevant Alternatives property. Give a real-life example of when it is violated.

3. **Consumer Theory (10)** Let p and p' be two lists of prices, and w be a wealth level. A policy maker wants to know how the welfare of Jane changes if prices change from one to the other. Formally describe and discuss two different ways to measure changes in her welfare *in terms of her expenditure*. (Hint: let $u = v(p, w)$, $u' = v(p', w)$, and recall $e(p, u) = w$).

4. **Risk Aversion (10)** Let $u(x) = \sqrt{x}$ be an agent's Bernoulli utility function for money, and w be his wealth. Consider the lottery that pays 10 euros with probability p, and 120 euros with probability $1 - p$.

   (a) Write the (expected) utility of the agent if:

       i. he owns wealth w

       ii. he owns wealth w *plus* some amount of money m

       iii. he owns wealth w *minus* some amount of money m

       iv. he owns wealth w and the lottery

       v. he owns wealth w, the lottery, *minus* some amount of money m

For the next two parts, you do not need to compute an exact number, just write conditions that x and y must satisfy.

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        i. ...envy-free?

       ii. ...in the Core for this economy? If it is not in the Core, then identify a blocking coalition.

(k) **Bonus (2)** What is the relationship between Walrasian Equilibria and the Core?

6. **Bonus (5)** Describe an experiment that demonstrates behavior contradicting expected utility maximization. Explain why it violates expected utility.