DECISIONS AND UNCERTAINTY: HOMEWORK # 6

- 1. Solve problem 5 in Chapter 8 in Kreps.
- 2. (WARNING: ONLY FOR THE MASOCHIST!!!) Solve problem 8 in Chapter 8 of Kreps.
- 3. Solve exercise 2 of Chapter 9 in Kreps.
- 4. Solve exercise 4 of Chapter 9 in Kreps.
- 5. Consider the simpler case of the Savage theorem (9.16 in Kreps) when all acts are simple (i.e., they have a finite range).
  - (a) Show that the axioms 9.1-3 and 9.7-10, are *necessary* as well as sufficient for this case.
  - (b) (WARNING: AS ABOVE) Suppose that in the statement of the theorem, we change (b) with the following: For all  $a \in A$  such that p(a) > 0 there is  $b \subseteq a$  such that 0 < p(b) < p(a) (a property of *p* called *non-atomicity*). Are all the axioms still necessary?
  - (c) Is axiom 9.9 independent of the others in this special case? Prove your answer. (HINT: It's not.)
  - (d) (WARNING: AS ABOVE) Consider now the general case in which acts can also be non-simple. Suppose that in the statement of the theorem we delete the specification "bounded" from utility. Are the axioms still necessary?