DECISIONS AND UNCERTAINTY: HOMEWORK # 3

1. Show that axioms (NM0) NM1, NM3 and the following property do *not* imply NM2. The property is: For every $p, q, r \in \mathcal{P}_S$ and every $\alpha \in [0,1]$, if $p \sim q$ then $\alpha p + (1-\alpha)r \sim \alpha q + (1-\alpha)r$. (HINT: Let p, q be (degenerate) lotteries such that for some $x, y \in X$, $p(x) = q(y) = 1$. Let the ordering $\succeq$ be such that $p \succ q$.)

2. Complete the proof of Lemma 2.4(iii) by showing that if $0 \leq \alpha < \bar{\alpha}$ then $Q \succ \alpha P + (1-\alpha)R$.

3. Solve problem 1 in Chapter 5 of Kreps.

4. Solve problem 4 in chapter 5 of Kreps.

5. Solve problem 5 in Chapter 5 of Kreps.