Midterm Study Sheet

Decisions, Games & Rational Choice

You should be able to supply roughly correct definitions for the following. You should also be able to apply them to particular cases.

Instrumental Rationality	Dutch Book
Ordinal Utility	Cardinal Utility
A Strongly Dominates B	Independence of Irrelevant Alternatives
A Weakly Dominates B	Hedonism
Decision Under Uncertainty	Objective-List Theory
Decision Under Risk	Preference-Satisfaction Theory
Synchronic Rationality	Rule of Conditionalization
Diachronic Rationality	A is probabilistically independent of B
Objective Probability	Prior Credences
Subjective Probability	Posterior Credences (or P_E)
Dutch Book Theorem	

You should be able to apply these rules to a decision problem or decision table:	You should be able to make use of these rules for connectives:
Strong Dominance Rule	$P(\neg a) = 1 - P(a)$
Weak Dominance Rule	$P(a \vee b) = P(a) + P(b) - P(a\&b)$
Maximax Rule	$P(a\&b) = P(a)P(b\|a)$
Maximin Rule	

You should be able to:

- Determine the regret of a choice given a state (in a decision table)
- Ascertain Conditional Probabilities (i.e. $P(d|e)$) for simple cases
  (like exercise 3 on problem set 2)
- Apply Bayes' Theorem to cases when the relevant probabilities are given
- Compute the Expected Utility of a relatively simple case
  (like exercise 2 on problem set 3)