CSE 473 QUIZ 2 REVIEW LIST
OPEN BOOK, OPEN NOTES, IN-CLASS EXAM

1. Logic
   - Be able to interpret predicate calculus formulas in English.
   - Be able to answer questions about the normalization done by resolution theorem provers for predicate calculus in order to get the formulas into conjunctive normal form.
   - Be able to give the clause form equivalent (CNF) of a SIMPLE set of formulas.
   - Be able to show how to produce a resolvent on a SMALL set of SIMPLE formulas.
   - Be able to perform a given small resolution proof and produce the refutation graph.
2. Game Playing
   - Be able to develop a utility function for a given game or show how a given one works.
   - Be able to show how a basic minimax search works for some given example.
   - Be able to show how the alpha-beta procedure works for some given example.
   - Be able to show how shallow search might be used to improve the alpha-beta procedure.
   - Be able to answer questions about how Samuel's checker player works.
   - Be able to show how minimax generalizes to games of chance.
3. Constraint Satisfaction Problems
   - Be able to formalize a constraint satisfaction problem by specifying the sets of variables, possible values, and constraints.
   - Be able to explain or illustrate how a backtracking tree search for a constraint satisfaction problem would work: alone or with forward checking.
   - Be able to answer questions about the difference between forward checking and arc-consistency.
4. Learning
   - Be able to use a given decision tree to classify a test vector.
   - Be able to construct the best decision tree for a given training set by
     (a) yourself, given the criteria for best

(b) information gain

- Be able to answer questions about overfitting in decision trees and what can be done about it.
- Be able to answer questions about the ensembles: bagging, boosting, stacking, and Chou's system for classifying pap smears.
- Be able to show how a given perceptron classifies a test vector.
- Be able to answer questions about how perceptrons learn their weights.
- Be able to answer questions about K-means clustering, the EM algorithm, and how they differ.