CSE 473 QUIZ 1 REVIEW LIST
OPEN BOOK, OPEN NOTES, IN-CLASS EXAM

1. Search

   - Be able to give a formal state-space model for a problem expressed in English. Formal means to specify S, s, A, f, g and c as sets or functions as appropriate.
   - Be able to specify what would be the dead states for a given problem.
   - Be able to generate part of a search tree for a given model, either depth-first or breadth-first.
   - Be able to answer questions about the general tree-search and general graph-search algorithms given in Chapter 3 and how they differ.
   - Be able to answer questions about the completeness and complexity of the various search variants given in Chapter 3.

2. Informed Search

   - Be able to explain the use of a heuristic function in a search or to give an example of one for a stated problem.
   - Be able to motivate the use of heuristic-search vs. blind search.
   - Be able to apply any of the following search methods to a well-stated problem and show a portion of the search.
     - greedy best-first search
     - A* algorithm
     - (steepest-ascent) hill climbing
   - Be able to answer questions about admissibility and consistency with respect to heuristic functions for A*.
   - Be able to describe the simulated annealing approach and its advantages/disadvantages and variants.
   - Be able to answer questions about complexity, completeness, and optimality for the above algorithms.

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 forward checking and arc-consistency.
- Be able to compare how a general heuristic search would compare with a constraint satisfaction search when both are applicable to a given problem.