CSCI 5582 Quiz 1

Name: ________________________

On my honor, as a University of Colorado at Boulder student, I have neither given nor received unauthorized assistance on this work. ________________________________.

1. (5 points) Which of the following search algorithms are complete?
   - Breadth First
   - Depth First
   - Uniform cost
   - IDA*

2. (5 points) True or False: Any search algorithm that is complete and optimal must examine all possible paths to a goal state.

3. (5 points) What problem with A* is IDA* designed to solve and what technique does it use to solve it?

4. (5 Points) If MiniMax is applied to a game with a branching factor of 10 to a depth of 6 moves (3 by each player) how many times will the board evaluation function be called?

5. Consider the following predicament. You are working in a route finding domain and you are employing A* with a straight-line heuristic. Unfortunately, the device used to generate the heuristic values sporadically returns a value less than the true straight-line distance.
   a) (5 points) What effect, if any, does this broken heuristic value generator have on the optimality of your A* search?
   b) (5 points) What effect, if any, does it have on the time and space performance of the search? Why?
   c) (5 points) Suggest a simple patch to your A* implementation that will ameliorate the effect of this broken device.

Use the back of this page for your answers to this question.