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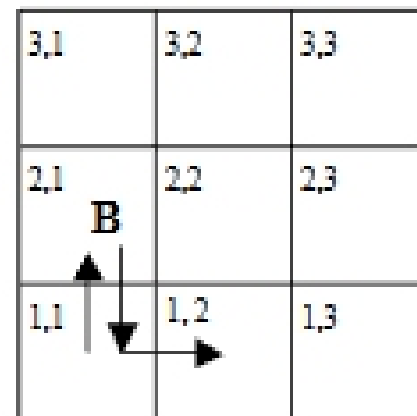
CSCI 5582 Final Exam

I. The following questions address the topic of Search. (15 points)

1. (5 points) Which of the following search algorithms are optimal?
 - Uniform cost
 - A*
 - Greedy
 - IDA*
2. (5 points) True or False: A search algorithm that is *complete* needs to examine all possible paths to a goal state.
3. (5 points) What problem with A* is IDA* designed to solve and how does it solve it?

II. The following questions address the topic of Logic. (25 points)

1. Recall the following Wumpus world rule from the text. When the agent detects a Breeze in a location, it means that there is at least one Pit in an adjacent location (up, down, left, or right; for some reason the Breeze doesn't go diagonally). Assume that our agent travels the path shown in the following figure.



- a. (10 points) What is the state of the agent's knowledge base with respect to the location of any pits at the point where it has moved from 1,1 to 2,1 and detects the Breeze there? More specifically, show this using propositions and show all the logical inference steps needed to get these propositions.