

1. Suppose we were going to create an algorithm to play Minesweeper. What are the characteristics of this environment? Circle your choice and give a brief justification for your answer.

- (a) Fully / Partially observable
- (b) Deterministic or Stochastic
- (c) Episodic or Sequential
- (d) Static or Dynamic
- (e) Discrete or Continuous
- (f) Single- or Multi-agent

2. The two most basic blind searches are depth-first search (DFS) and breadth-first search (BFS). Suppose we have a problem in which the search tree has a maximum depth m , a solution node at depth d , and each node has b children. Fill out the following table.

	BFS	DFS
Time complexity	$O(\quad)$	$O(\quad)$
Space complexity	$O(\quad)$	$O(\quad)$

	BFS	DFS
Optimal?	yes / no	yes / no
Complete?	yes / no	yes / no

3. What does it mean for a search algorithm to be *complete*?

4. Consider the following algorithm for searching a tree for a goal node:

- Put start node on a queue Q
- Repeat:
 - If Q is empty, return failure
 - Remove first node N from Q
 - If N is goal, return success
 - Add children of N to the *front* of Q

Does this algorithm implement BFS or DFS (circle one)?