

We refer to the files contained in the Astarsolution, BFSsolution and Dijkstrasolution folders.

Board 1.1

- a) The total distance is the same for all algorithms. Dijkstra chooses a different path than BFS and Astar.
- b) BFS and Dijkstra have closed most of the nodes on the map before they find the solution, while Astar have opened and closed a lot less. Astar have only opened nodes on the way to the goal.

Board 1.2

- a) Astar follows the the edge of the inaccessible nodes, while BFS and Dijkstra seems to move in straight lines.
- b) Astar have opened and closed less nodes than both BFS and Dijkstras, especially after it have come past the inaccessible nodes and there's a clear path to the goal.

Board 1.3

- a) Astar follows the the edge of the inaccessible nodes, while BFS and Dijkstra seems to move in straight lines.
- b) Astar have opened and closed less nodes than both BFS and Dijkstras, especially after it have come past the inaccessible nodes and there's a clear path to the goal.

Board 1.4

- a) all algorithms follow the same path
- b) BFS and Dijkstra behaves identically. Astar opens and closes less nodes in the path leading away from the goal, making it slightly more efficient.

Board 2.1

- a) Dijkstra and Astar finds the same path. BFS chooses to walk in a straight line towards the goal, despite the cost.
- b) Astar opens and closes slightly less nodes than Dijkstra (saving around 3 nodes for each row), while BFS searches in a semi-circle from the start towards the goal, which means it is the one that investigates the least amount of nodes.

Board 2.2

- a) All algorithms finds the same shortest path.
- b) BFS investigates every node in a circle until it finds the goal. Dijkstra and Astar is more selective, and don't investiate nodes that are not in the direction of the goal and that have high weights.

Board 2.3

- a) Astar and Dijkstra have found slightly different paths but with the equivalent cost. BFS walks in an as straight line as possible, and finds a much more expensive path.
- b) Dijkstra investigates all the cheap nodes to the far right of the board, while Astar does not investigate cheap nodes that does not bring it closer to the goal.

Board 2.4

- a) Astar and Dijkstra have found identical paths with the same cost. BFS walks in a straight line towards the goal, and finds a very expensive path.
- b) Astar and Dijkstra investigates the same general areas on the map, but Astar seems to be slightly more selective, and investigates less nodes that aren't in the direction of the goal. BFS investigates even less nodes, because it investigates everything in a circle around the start, and start was very close to the goal on this board.