Exercise assignment for the course Introduction to AI (Part I) in the Bachelor of AAI at Rosenheim University of Applied Sciences

Assignment 06 - SEARCH

Question 1

Between depth first search (DFS) and breadth first search (BFS), which will find a shorter path through a maze?

a) DFS will always find a shorter path than BFS

b) BFS will always find a shorter path than DFS

c) BFS will most times, but not always find a shorter path than DFS

d) Both algorithms will always find paths of the same length

Question 2

Given is the following maze. Grey sells indidcate walls. A search algortihm was run on this maze and found the following yellow highleghtes path from A to B. The read cells mark the states explored but did not lead to the goal.
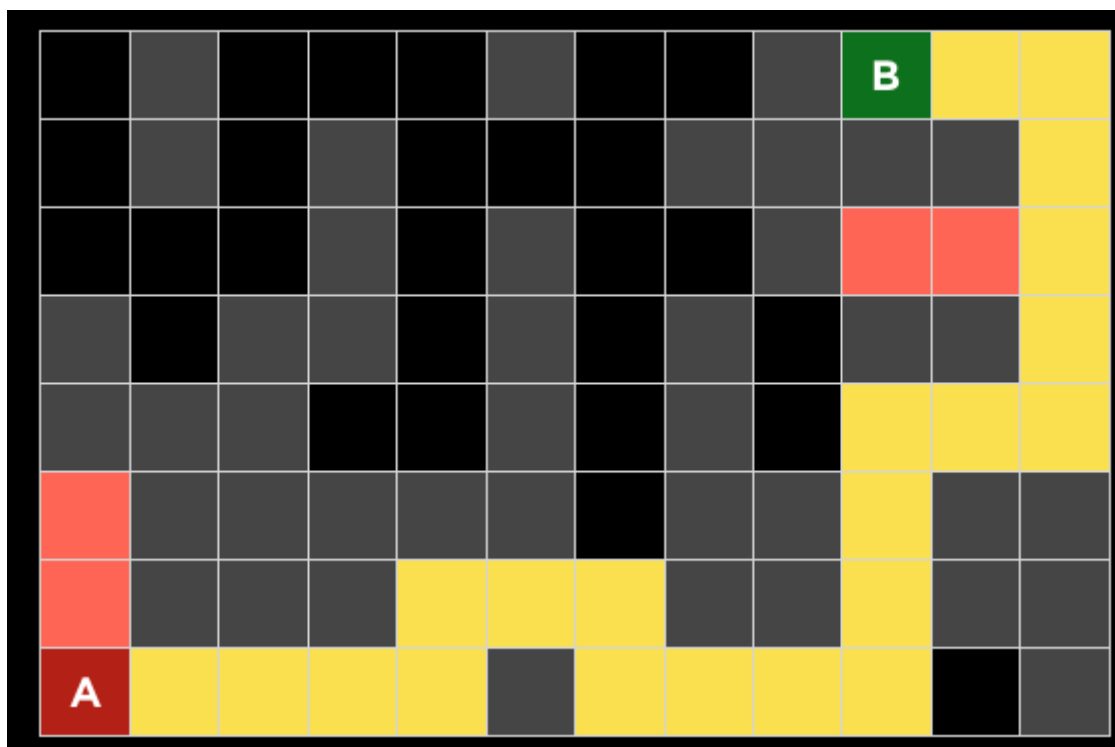
a) Could only be A*

b) Could only be greedy best-first search

c) Could only be DFS

d) Could only be BFS

e) Could be either A* or greedy best-first search

f) Could be either DFS or BFS

g) Could be any

Question 3

Why is depth-limited minimax sometimes preferable to minimax without a depth limit?

a) Depth-limited minimax can arrive at a decision more quickly because it explores fewer states

b) Depth-limited minimax will arrive the same output as minimax without depth limit, but can sometimes use less memory

c) Depth-limited minimax can make more optimal decision by not exploring states to be subotimal

d) Depth-limited minimax is never preferable to minimac without depth limit.

Question 4:

In the following figure the green up arows indicate hte MAX player and the red dwon arrows indicate the MIN player. The leaf nodes are each labelled with their value.
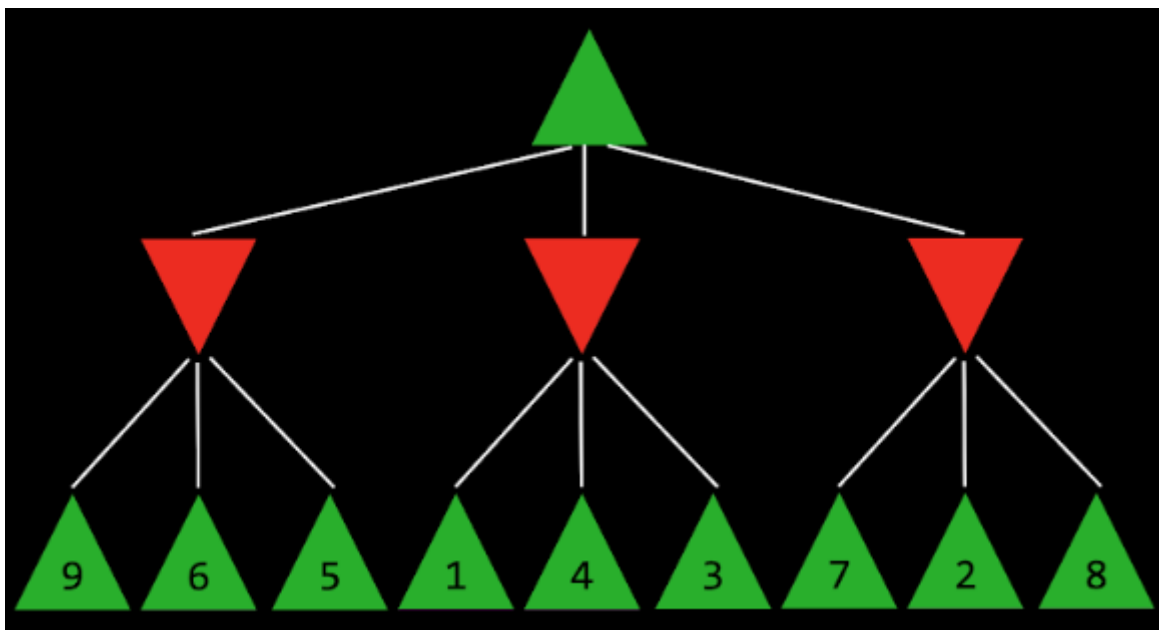
What is the value of the root node?