Lab Sheet for AI Techniques, Part 2/7

Task 1
(a) Define in your own words the following terms: state space, search tree, goal, action, branching factor, (search) completeness, and (search) optimality. (Write down your answers.)
(b) What is the difference between a world state, a state description, and a search node?

Task 2
Consider a state space where the start state is number 1 and each state k has three successors: 3k-1, 3k and 3k+1.
(a) Draw the portion of the state space for states 1 to 13.
(b) Suppose the goal state is 10. List the order in which nodes will be visited for BFS, DFS with limit 2, and iterative deepening search.