(3) space? Also $O(b^d)$

(4) Optimal? level-by-level, so shallowest goal returned

**DFS:**

1. complete?

```
     0
    / \
   0   0 < goal
```

 Finite state space: Yes

 Infinite: No (not always)

(2) time? depth

```
    0
   / \ 1
  0   0 < goal 2
     / \ \
    0   0 < goal m
```

Even if goal is high up, still have to search up to max depth

$\Rightarrow O(b^m)$