What order would this variant visit the states?

```python
def search(state):
    if state.is_goal():
        return state
    else:
        for s in state.next_states():
            result = search(s)
            if result != None:
                return result
        return None
```

1, 2, 5

What search algorithm is this?

DFS! Where's the stack?
One last DFS variant

How is this different?

N-queens problem

Place $N$ queens on an $N$ by $N$ chess board such that none of the $N$ queens are attacking any other queen.

Solution(s)?
N-queens problem

Place N queens on an N by N chess board such that none of the N queens are attacking any other queen.

Solution(s)?

Search algorithm

add the start state to to_visit

Repeat
  □ take a state off the to_visit list
  □ if it’s the goal state Is this a goal state?
    □ we’re done!
  □ if it’s not the goal state What states can I get to from the current state?
    □ Add all of the next states to the to_visit list

Any problem that we can define these three things can be plugged into the search algorithm!

N-queens problem

Place N queens on an N by N chess board such that none of the N queens are attacking any other queen.

How do we solve this with search:

What is a state?
What is the start state?
What is the goal?
How do we transition from one state to the next?

http://en.wikipedia.org/wiki/Eight_queens_puzzle