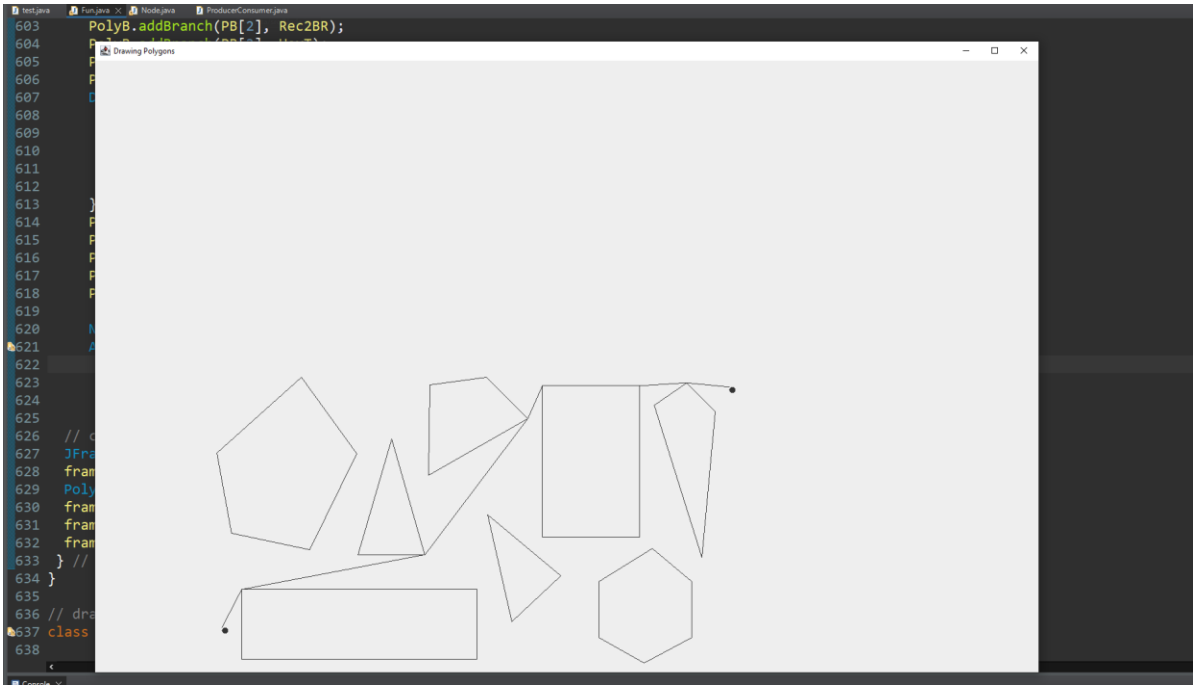
1. 

2. To get the upper bound, if there are n queens, and each queen must go on its own column, we can do n(n-1)(n-2) until we get to the last column giving up n! To get the lower bound each queen needs to be in its own row and at least one queen in each diagonal, we get n*n. We have our range, and by taking the logarithm of both sides, and using logarithm rules, and dividing by log(n), we get n*log(n) <= log(state space) <= log(n!)/(log(n)-1). After taking the cube root, we get that the lower bound becomes 3√n!. The number of queens to make it exhaustive is 20.
3. **DFS:**

Expanded: Start-N-P-Goal

Final: Start-N-P-Goal

BFS:

Expanded: Start - (1st: N,M,Q) - (2nd: P,Goal)

Final: Start – Q – Goal

Uniform Cost search:

Expanded: Start -(3) -M -(4)- Q -(5) - Goal = 12 cost

Final: Start: -(2)- N - (4) - P -(2)- Goal = 8 cost

Greedy:

Expanded: Start – Q(h2) - Goal, cost 2H

Final: Start- Q(h2) - Goal , costed 2H