1. Since we have two loop same inside the runtime will not change. It is still O(N2). Because it was running n times \* n times now it will run (n-1) times \* (n-1) times.
2. ?
3. Numbers that’s are smaller then 50, I would choose 30\*N2, because it is more efficient but numbers that’s are more than 50 the other (1500\*N) is more efficient.
5. Let’s say we have n letters so we will choose fist one, we have n choice and for second letter we have n-1 choice. Since we do not take the AB and BA kind of things so all choice that we can find will be half of them. But it will not affect the Big O notation so the answer is O(N2)
6. It is asking for area not volume, so it depends on N2
7. Number of cubes increase by N! So function will be something like f(n)=n!+f(n-1) so O(N) = N!
8. Data structure is some tools and algorithms is the way to use tools. So u can have the tools without knowing how to us but it will not solve anything, they will just exist. On the other hand, knowing how to use tools will not help to build something.