

Problem Solving Strategies

Here are the first steps you should take when you see a problem:

- 1) Solve the sample input by hand.
- 2) Find a great way to visualize the problem.
- 3) Notice any constraints are oddly small.

General Strategies

(Can stack these on top of each other, but only add one at a time):

- See if any constraints are oddly small and figure out why.
- If you can sort, then try all the different sorts that make sense.
- Solve a simpler problem

If you get stuck on a step, or if you are “trying and idea”

- Create 6-7 test cases of size $N=6$ or $N=7$ and solve them by hand thinking about that step. Look for patterns here.
- The same test cases you create here can be used if you get stuck on a future step.

Always:

- If we make an observation that leads us to a simpler problem, or if we pick a simpler problem to work on, ignore the original problem (it's like the original problem never existed). Just focus on solving the simpler problem.
- If you spent 20 minutes working on one approach to a problem and have gotten nowhere, try a different approach!

Other Strategies:

- If you get offline queries, sort them!
- If you want to get the least lexicographical ordering, greedily put the smallest item possible in the first location, then put the smallest item possible in the second location, etc.