ABC 160E Red and Green Apples

You are going to eat green apples and red apples. You have green apples, each with tastiness, red apples, each with tastiness, and white apples, each with tastiness. You can paint a white apple either red or green. Find the maximum total tastiness.

Try to think of a solution before reading on!

Firstly, you see the constraint . This gives you a clue the that solution should be or , and sorting is likely used.

Let us sort the arrays and (in descending order). Since and , we only need to use the first elements of and the first elements of .

How do we deal with the write apples? Let’s say we pick apples out of the apples. Then, we see that any combination is valid as long as we picked green apples and red apples because we can just paint the white apples we picked green or red! For example, if and , and we chose 2 green apples, 1 red apple and 2 white apples, we can just paint 1 of the white apples green and another red.

Therefore, the solution is as follows: pick the tastiest apples out of , the tastiest apples out of , and the white apples, and put them into an array of size . Then, sort them and just take the tastiest apples!

