# PE class

### Subtasks 1 and 2

Let's iterate through all possible strings of length $2^{2n}$ and check each one. For $n = 2$, all cases can be examined manually.

### Subtask 3

There are only two cases: $a_i = 0$ or $a_i = -1$. When $a_i = 0$, the answer will be $LRLRLR\ldots$, and when $a_i = -1$, the answer will be $RLRLRL\ldots$.

### Subtask 4

If $a_1 = 0$, then $s_1 = L$, otherwise $s_1 = R$. Then we can keep track of how many L's and R's have been placed in the prefix, and from this we can uniquely calculate the next character.

### Subtask 6

**Claim**. The multiset of numbers obtained for $L$ is the same as the multiset obtained for $R$.

*Proof.* It can be proven using mathematical induction. In any case, there will be adjacent $L$ and $R$. It is easy to notice that the obtained numbers for them are the same. And since they do not affect all the others, we can remove them. Then we can proceed to the problem with $n - 2$.

It turns out that each number in the array $a$ occurs an even number of times. If we leave half of the occurrences for each number, these will be the obtained numbers for all $L$. Let's denote this array as $La$. Now, using the minimum number of $R$ symbols, we will obtain all the numbers from the array $La$. To do this, we will sort the values in the array in ascending order and insert the necessary elements in this order.