Problem D. Maximum Beauty Array

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

Suppose that you have an array. You may perform the following operation any number of times (possibly zero):

- choose an element of the array and delete either all elements before it, or all elements after it (excluding the element itself). The cost of this operation is the value of the chosen element.

The *beauty* of the array is the minimum cost of a sequence of operations that reduces the size of the array to exactly 1.

You are given an array a consisting of n integers. In one second, you can choose two **adjacent** elements of a and swap them.

Your task is to calculate two values:

- the maximum beauty of a you can achieve;
- the minimum time you need to achieve the maximum beauty.

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of test cases.

Each test case consists of two lines:

- the first line case contains a single integer n ($2 \le n \le 3 \cdot 10^5$).
- the second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$).

Additional constraint on the input: the sum of n over all test cases doesn't exceed $3 \cdot 10^5$.

Output

For each test case, print two integers — the maximum possible beauty of the array and the minimum time (in seconds) you have to spend in order to achieve the maximum possible beauty.

Example

standard input	standard output
3 4 3 1 4 2 2 3 1 5 2 3 4 2 2	2 0 1 0 3 3