Problem S. Sasha and the Beautiful Array

Time limit 1000 ms
Mem limit 262144 kB

Sasha decided to give his girlfriend an array $a_1, a_2, \ldots, a_n$. He found out that his girlfriend evaluates the *beauty* of the array as the sum of the values $(a_i - a_{i-1})$ for all integers i from 2 to n.

Help Sasha and tell him the maximum beauty of the array a that he can obtain, if he can rearrange its elements in any way.

Input

Each test consists of multiple test cases. The first line contains a single integer t ($1 \le t \le 500$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains a single integer n ($2 \le n \le 100$) — the length of the array a.

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the elements of the array a.

Output

For each test case, output a single integer — the maximum beauty of the array a that can be obtained.

Examples

Input	Output
5 3 2 1 3 3 69 69 69 5 100 54 80 43 90 4 3 4 3 3 2 2 1	2 0 57 1 1

Note

In the first test case, the elements of the array a can be rearranged to make $a = [1, 2, 3]$. Then its beauty will be equal to $(a_2 - a_1) + (a_3 - a_2) = (2 - 1) + (3 - 2) = 2$.

In the second test case, there is no need to rearrange the elements of the array a. Then its beauty will be equal to 0.