IOI Training Camp 2015

Sherlock and Watson

Watson, as usual, is not so pleased with Sherlock. He is in the mood to ask some mathematical questions to Sherlock. He first gives him N integers $B_1, B_2, ..., B_N$. Now, he asks Sherlock to define N integers $A_1, A_2, ..., A_N$ such that $1 \leq A_i \leq B_i$ for $1 \leq i \leq N$.

He also wants Sherlock to define these numbers in such a way that the sum $S = \sum_{i=2}^{N} |A_i - A_{i-1}|$ is maximized. Here $|x|$ denotes the absolute value of x.

Input

The first line of input will contain an integer T, *i.e.*, the number of test cases.

Each test case consists of N in one line followed by N space separated integers in next line denoting $B_1, B_2, ..., B_N$.

Output

For each test case, output in one line the maximum possible value of the sum S as defined in the statement.

Test Data

In all the subtasks, $1 \leq T \leq 20$ and $1 \leq B_i \leq 100$ for all $1 \leq i \leq N$.

Subtask 1 (30 Points): $N \leq 100$.

Subtask 2 (70 Points): $N \leq 10^5$.

Sample Input

```
1
5
10 1 10 1 10
```

Sample Output

```
36
```

Explanation

In example, the maximum value of S occurs when $A = B$.

Limits

Time: 1 second

Memory: 256 MB