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Sherlock and Cost



by darkshadows

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Array A contains the elements, A_1, A_2, \dots, A_N . And array B contains the elements, B_1, B_2, \dots, B_N . There is a relationship between A_i and B_i , $\forall 1 \leq i \leq N$, i.e., any element A_i lies between 1 and B_i .

Let the cost S of an array A be defined as:

$$S = \sum_{i=2}^N |A_i - A_{i-1}|$$

You have to print the largest possible value of S .

Input Format

The first line contains, T , the number of test cases. Each test case contains an integer, N , in first line. The second line of each test case contains N integers that denote the array B .

Constraints

$$1 \leq T \leq 20$$

$$1 \leq N \leq 10^5$$

$$1 \leq B_i \leq 100$$

Output Format

For each test case, print the required answer in one line.

Sample Input

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

Sample Output

```
36
```

Explanation

The maximum value occurs when $A_1 = A_3 = A_5 = 10$ and $A_2 = A_4 = 1$.

[f](#) [t](#) [in](#)

Submissions: 9350

Max Score: 50

Difficulty: Medium

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Java 8



```
1 import java.io.*;
2 import java.util.*;
3
4 public class Solution {
5
6     public static void main(String[] args) throws IOException{
7
8         BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
9         int tst = Integer.parseInt(br.readLine());
10
11         for(int i = 0 ; i < tst ; i++){
12
13             int N = Integer.parseInt(br.readLine());
14
15             String line = br.readLine();
16             String[] numbers = line.split("\\s");
17
18             int[] arr = new int[N];
19
20             int high = 0;
21             int low = 0;
22
23             for(int j = 1 ; j < N ; j++){
24
25                 int out1 = Integer.parseInt(numbers[j - 1]) - 1;
26                 int out2 = Integer.parseInt(numbers[j]) - 1;
27                 int out3 = Math.abs(Integer.parseInt(numbers[j]) - Integer.parseInt(numbers[j - 1]));
28
29
30                 int lowNext = Math.max(low,high+out1);
31                 int hiNext = Math.max(high + out3, low + out2);
32
33                 high = hiNext;
34                 low = lowNext;
35             }
36
37             System.out.println(Math.max(high,low));
38
39         }
40
41     }
42 }
```

Line: 1 Col: 1

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