Sherlock and Cost



In this challenge, you will be given an array B and must determine an array A. There is a special rule: For all i, $A[i] \leq B[i]$. That is, A[i] can be any number you choose such that $1 \leq A[i] \leq B[i]$. Your task is to select a series of A[i] given B[i] such that the sum of the absolute difference of consecutive pairs of A is maximized. This will be the array's cost, and will be represented by the variable S below.

The equation can be written:

$$S=\sum_{i=2}^N |A[i]-A[i-1]|$$

For example, if the array B=[1,2,3], we know that $1 \leq A[1] \leq 1$, $1 \leq A[2] \leq 2$, and $1 \leq A[3] \leq 3$. Arrays meeting those guidelines are:

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[1,1,1], [1,1,2], [1,1,3]
[1,2,1], [1,2,2], [1,2,3]
```

Our calculations for the arrays are as follows:

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|1-1| + |1-1| = 0 |1-1| + |2-1| = 1 |1-1| + |3-1| = 2 |2-1| + |1-2| = 2 |2-1| + |2-2| = 1 |2-1| + |3-2| = 2
```

The maximum value obtained is 2.

Function Description

Complete the *cost* function in the editor below. It should return the maximum value that can be obtained. cost has the following parameter(s):

• B: an array of integers

Input Format

The first line contains the integer $oldsymbol{t}$, the number of test cases.

Each of the next $oldsymbol{t}$ pairs of lines is a test case where:

- The first line contains an integer n, the length of B
- The next line contains n space-separated integers B[i]

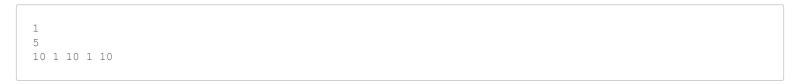
Constraints

- $1 \le t \le 20$
- $1 < n < 10^5$
- $1 \le B[i] \le 100$

Output Format

For each test case, print the maximum sum on a separate line.

Sample Input



Sample Output

36

Explanation

The maximum sum occurs when A[1]=A[3]=A[5]=10 and A[2]=A[4]=1. That is |1-10|+|10-1|+|1-10|+|10-1|=36.