

7671 What a Beautiful Lake

Weiming Lake, also named “Un-named Lake”, is the most famous scenic spot in Peking University. It is located in the north of the campus and is surrounded by walking paths, small gardens, and old red buildings with typical Chinese curly roofs. The lake was once the royal garden in Qing Dynasty. Boya tower stands on a little hill beside the lake. The lake and the tower form a distinctive landscape and a symbol of Peking University.



Weiming Lake is a very good place for studying, reading, skating in the winter, and of course, jogging. More and more students and teachers run or walk around Weiming Lake every day and show how many paces they have covered in the mobile app WeChat Sports to get “Zans” (applauses).

ACMer X also enjoys jogging around Weiming Lake. His watch can measure and record an altitude value every meter. After a round of running, X collected the altitude data around the lake. Now he wants to find out the longest slope around the lake.

Input

There are no more than 20 test cases.

Each case has two lines.

The first line is an integer N ($2 \leq N \leq 100$) meaning that the length of the road around the lake is N meters.

The second line contains N integers $a_1, a_2 \dots a_N$, ($0 \leq a_1, a_2 \dots a_N \leq 100$) indicating N altitude sample values around the lake. The samples are given in clockwise order, and the distance between two adjacent samples is one meter. Of course the distance between a_1 and a_N is also one meter.

The input ends by a line of ‘0’.

Output

For each test case, print the length of the longest slope in meters. A slope is a part of the road around the lake, and it must keep going up or going down. If there are no slope, print ‘0’.

Sample Input

```
4
1 1 1 1
8
5 1 2 3 4 5 6 2
6
5 4 3 2 1 2
10
1 0 2 3 2 2 3 4 3 2
0
```

Sample Output

0
5
4
4