Candy Machine

Augustus Gloop is visiting Willy Wonka's chocolate factory again. In the factory he encountered a strange machine which gives out candies. He decides to scoop out all the candies since he's very hungry. The machine has the candies in multiple stacks with different number of candies in each stack. A candy is called internal if the candy has adjacent candies on all four of it's sides. In the case of candies touching the bottom of the machine, it needs to have three adjacent candies to be internal. The machine allows you to sweep over the stack. In one sweep, you can pick all the candies that are not internal. Augustus is impatient and wants to quickly eat up all the candies. Find the minimum number of sweeps required to empty the machine.

Input Format

- The first line contains the number of test cases T.
- The first line of each test case contains S, the number of stacks.
- The second line of each test case contains S integers where the i^{th} integer is the number of candies in the i^{th} stack.

Constraints

- $T \leq 10$
- $1 \leq S \leq 10^5$
- $1 \leq$ number of candies in a stack $\leq 10^9$

Output Format

For each test case, print the number of sweeps required.

Sample Input 0

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1
6
2 1 4 6 3 1
```

Sample Output 0

```
3
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Explanation 0