C. The Ancient Wizards' Capes
C. 古代巫师的斗篷

time limit per test: 2 seconds

测试每题时间限制 2 秒

memory limit per test: 256 megabytes

每测试用例内存限制 256 兆字节

There are n wizards in a row numbered 1 to n from left to right. Each wizard has an invisibility cape which can be worn either on his left side or on his right side. Harry walks from the position of wizard 1 until the position of wizard n ($1 \le n \le 10^5$), and registers how many wizards he sees from each wizard's position. A wizard in position j is visible from position i if:

这里有 n 个巫师排成一行，编号从 1 到 n ，从左到右。每个巫师都有一件隐形斗篷，可以穿在左边或右边。哈利从巫师 1 的位置走到巫师 n （ $1 \le n \le 10^5$ ）的位置，并记录他从每个巫师位置看到多少个巫师。如果巫师 j 从位置 i 可见，则：

- Wizard j wears his cape on his left side and $i \ge j$.

  巫师 j 将斗篷披在左边， $i \ge j$ 。

- Wizard j wears his cape on his right side and $i \le j$.

  巫师 j 将他的斗篷披在右边， $i \le j$ 。

In particular, note that wizard i is visible from position i.

特别是，请注意巫师 i 在位置 i 是可见的。

Harry's list is very old but, after much work, you managed to decipher it. The list is an array a of n elements, where the i-th element a_i ($1 \le a_i \le n$) is the number of wizards that Harry saw from the position of wizard i.

哈利的清单非常古老，但经过大量工作，你设法解读了它。该清单是一个包含 n 个元素的数组 a ，其中第 i 个元素 a_i （ $1 \le a_i \le n$ ）是哈利从巫师 i 的位置看到的巫师数量。

Your task is to determine how many of all the possible cape arrangements that Harry could have seen are consistent with the data recorded by the list, modulo $676\,767\,677$.

你的任务是确定哈利可能看到的所有可能的斗篷排列中，有多少与清单记录的数据一致，取模 $676\,767\,677$ 。

Input 输入

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 10^4$). The description of the test cases follows.

每个测试包含多个测试用例。第一行包含测试用例的数量 t （ $1 \le t \le 10^4$ ）。测试用例的描述随后。

The first line of each test case contains a single integer n ($1 \le n \le 10^5$) — the length of a.

每个测试用例的第一行包含一个整数 n （ $1 \le n \le 10^5$ ）— a 的长度。

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le n$) — the elements of a.

第二行包含 n 个整数 $a_1, a_2, \ldots, a_n$ （ $1 \le a_i \le n$ ）— a 的元素。

It is guaranteed that the sum of n over all test cases does not exceed 10^5.

保证所有测试用例中 n 的总和不超过 10^5 。

Output 输出

→ **Submit?**
→ **提交?**

Language:
语言: GNU G++20 13.2 (64 bit, v

Choose file: 选择文   [选择文件] 未选择文件
件:

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

请注意：对于未通过预测试或重新提交的提交（除第一次测试失败、拒绝判断或类似裁决外），将扣除 50 分。"通过预测试"的提交结果并不保证解决方案绝对正确，并且它将通过系统测试。

[Submit]

→ **Score table**   → **分数表**

	Score 分数
Problem A 问题 A	374
Problem B 问题 B	748
Problem C 问题 C	1309
Problem D 问题 D	1496
Problem E 问题 E	1683
Problem F 问题 F	2244
Successful hack 成功黑客攻击	100
Unsuccessful hack 失败黑客攻击	-50
Unsuccessful submission 提交失败	-50
Resubmission 重新提交	-50

* If you solve problem on 01:03 from the first attempt

* 如果您第一次尝试在 01:03 解决了这个问题

For each test case, print one integer — the number of arrangements for the wizards' capes that satisfy the condition, modulo $676\,767\,677$.
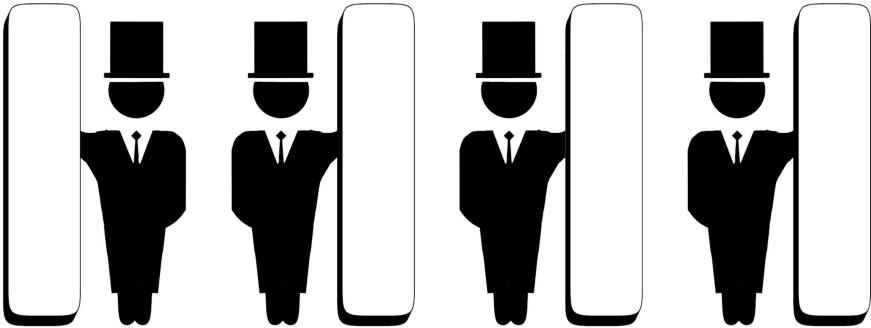
对于每个测试用例，打印一个整数 — 满足条件的法师披风排列方式的数量，取模 $676\,767\,677$ 。

Example 示例

input 输入	Copy 复制

```
7
1
1
4
4 4 3 2
3
1 3 2
2
2 1
3
2 2 2
3
3 2 3
3
3 2 2
```

output 输出	Copy 复制

```
2
1
0
1
2
0
0
```

Note 注意

The image below shows an arrangement of capes that matches Harry's list in the second test case.

下方的图像显示了与第二个测试用例中 Harry 的列表相匹配的斗篷排列。

Wizard 1 has the invisibility cape on his left side, while wizards 2, 3, and 4 wear it on their right side.

法师 1 将隐形披风穿在左侧，而法师 2 ， 3 ，和 4 将它穿在右侧。

- From position 1, we can see wizards $1, 2, 3$, and 4.

  从位置 1 ，我们可以看到巫师 1 ， 2 ， 3 ，和 4 。

- From position 2, we can see wizards $1, 2, 3$, and 4.

  从位置 2 ，我们可以看到巫师 1 ， 2 ， 3 ，和 4 。

- From position 3, we can see wizards $1, 3$, and 4.

  从位置 3 ，我们可以看到巫师 1 ， 3 ，和 4 。

- From position 4, we can see wizards 1 and 4.

  从位置 4 ，我们可以看到法师 1 和 4 。

Thus, Harry's list ends up being $[4, 4, 3, 2]$. It can be proved that this is the only possible arrangement.

因此，哈利的名单最终是 $[4, 4, 3, 2]$ 。可以证明这是唯一可能的排列。

In the third test case, it can be proved that Harry could not have obtained his list from any cape arrangement.

在第三个测试用例中，可以证明哈利不可能从任何斗篷排列中获得他的名单。

In the fifth case, note that there are two possible cape arrangements from which Harry could have gotten his list:

在第五个案例中，请注意，有两种可能的斗篷排列，哈利可能从中获得他的名单：

- 1 | | 2   3 |
- | 1   2 | | 3