

Good Partitions

Description

Given a set S of integers a_1, a_2, \dots, a_n , you need to compute the number of good partitions, where we define a good partition as follows:

$\exists S_1, S_2 \subseteq S$, such that $S_1 \cup S_2 = S, S_1 \cap S_2 = \emptyset, |S_1| > \max S_1$, and $|S_1| < \min S_2$, in which $\max/\min T$ denotes the maximum/minimum element in the set T . We also define $\max \emptyset := -\infty$ and $\min \emptyset := \infty$.

For example, if you have a set of integers $\{6, 0, 3, 3, 6, 7, 2, 7\}$, there are three possible good partitions:

1. $S_1 = \{0\}, S_2 = \{6, 3, 3, 6, 7, 2, 7\}$
2. $S_1 = \{0, 3, 3, 2\}, S_2 = \{6, 6, 7, 7\}$
3. $S_1 = \{6, 0, 3, 3, 6, 7, 2, 7\}, S_2 = \emptyset$

You are asked to print the number of good partitions.

Input

Each test contains multiple test cases. The first line contains the number of test cases T . The description of the test cases follows.

The first line of each test case contains one integer n .

The second line contains n integers a_1, a_2, \dots, a_n .

Output

For each test case, print an integer indicating the number of good partitions.

Sample Input/Output

input

```
4
2
1 1
7
0 1 2 3 4 5 6
8
6 0 3 3 6 7 2 7
5
3 0 0 3 3
```

output

```
2
1
3
2
```

Constraints and Note

$$1 \leq T \leq 10, 2 \leq n \leq 2 \cdot 10^5, a_i \in [0, n - 1].$$