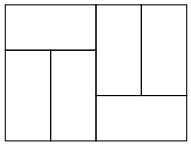
Problem J - Domino Tableaux

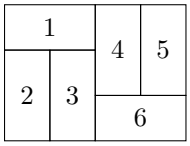
Remember the problem of domino tiling? Given an $m \times n$ rectangular board, we want to tile it with 1×2 dominos. For example, we can tile a 3×4 board with the following tiling:

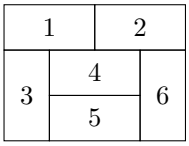


We want to give each of the dominos a unique sequential number, starting from 1, subjecting to the following condition:

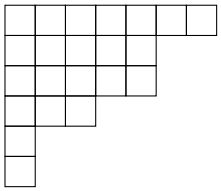
- For two dominos X and Y, if there is any interior point of X, located at upper-left position to some interior point of Y, then the number of X must be strictly less than number of Y.

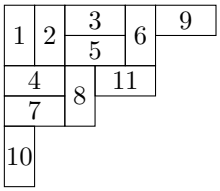
For example, the following are two valid domino tiling with numbers on a 3×4 board:





Let's consider a partial board like this:





The i-th row has exactly λ_i number of cells, and they satisfy

$$\lambda_1 \geq \lambda_2 \geq \cdots \geq 0$$

We call the sequence $\lambda = (\lambda_1, \lambda_2, \cdots)$ a *partition*, and the *size* of the diagram is denoting by $n = |\lambda| = \lambda_1 + \lambda_2 + \cdots$.

Now Little Tomato gets a partition λ with $|\lambda| = n$, can you help him to count how many domino tilings with numbers are there in λ?

Input

The first line contains an integer T ($1 \leq T \leq 200$) indicating the number of test cases.

For each test case the first line contains an integer m ($1 \leq m \leq 100000$). The second line contains m non-increasing positive integers $\lambda_1, \lambda_2, \cdots, \lambda_m$. Their sum is guaranteed to be no more than 100000.

Output

For each test case, please output the answer modulo 1000000007.

Sample Input

```
3
1
9
4
3 3 3 3
6
7 5 5 3 1 1
```

Sample Output

```
0
30
73920
```