Problem E. Random Permutation

Input file:	*standard input*
Output file:	*standard output*
Time limit:	10 seconds
Memory limit:	512 mebibytes

You are given a permutation p consisting of n integers from 1 to n. You want to build a sequence a from p. To do that, you perform the following operation n times:

- append the minimum element of p to the end of a;
- remove one of the ends of p (either left or right).

You are given a **random** permutation p. Your task is to calculate the number of different sequences a that can be obtained in the way described above. This number can be very large, so find it modulo 998 244 353. Two sequences are different if there is a position at which these sequences differ.

A permutation of size n is a sequence of n distinct integers from 1 to n.

Input

The first line contains an integer t ($1 \le t \le 2 \cdot 10^5$), the number of test cases. The test cases follow.

The first line of each test case contains an integer n, the size of the permutation ($1 \le n \le 2 \cdot 10^5$). The next line contains the permutation itself: n distinct integers from 1 to n. The permutation is generated using a pseudorandom number generator.

The sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output a line with a single integer: the required number modulo 998 244 353.

Example

standard input	*standard output*
4 5 4 3 5 1 2 5 5 3 1 2 4 2 2 1 3 1 3 2	8 7 2 4