



Finding Teammate

Problem Code: **TEAMMATE**

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Snackdown 2019 is coming! Since Snackdown is a contest of teams with up to two members, everyone is looking for a teammate. There are N contestants (numbered 1 through N) who want to participate in Snackdown; let's denote the skill level of the i -th contestant by S_i . These people want to pair up in $N/2$ teams; each team should consist of two people.

Clearly everyone wishes for their teammate to be as skilled as possible, so everyone wants to maximize their teammate's skill level. We call a pairing (an unordered $N/2$ -tuple of teams) *valid* if there are no two teams consisting of people (A, B) and (C, D) such that $S_D > S_B$ and $S_A > S_C$ — in that case, A and D would both prefer to be on the same team rather than with their current teammates.

Find the number of valid pairings. Since this number can be large, compute it modulo 1,000,000,007.

Input

- The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
- The first line of each test case contains a single integer N .
- The second line contains N space-separated integers S_1, S_2, \dots, S_N .

Output

For each test case, print a single line containing one integer — the number of valid pairings modulo 1,000,000,007.

Constraints

- $1 \leq T \leq 1,000$
- $2 \leq N \leq 10^5$
- N is even
- the sum of N for all test cases does not exceed 10^6
- $1 \leq S_i \leq 10^6$ for each valid i

Example Input

```
2
4
1 7 3 8
4
2 3 2 2
```

Example Output

```
1
3
```

Explanation

Example case 1: The only valid pairing is for contestant 2 to be paired with contestant 4 (so contestants 1 and 3 form the other team).

Example case 2: Since person 2 has the highest skill level and all others have the same skill levels, person 2 can choose anyone among the other three as a teammate. The remaining two people also form a team, so the number of pairings is 3.

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Date Added: 10-10-2018

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: C, CPP14, JAVA, PYTH, PYTH 3.6, PYPY, CS2, PAS fpc, PAS gpc, RUBY, PHP, GO, NODEJS, HASK, rust, SCALA, swift, D, PERL, FORT, WSPC, ADA, CAML, ICK, BF, ASM, CLPS, PRLG, ICON, SCM qobi, PIKE, ST, NICE, LUA, BASH, NEM, LISP sbcl, LISP clisp, SCM guile, JS, ERL, TCL, kotlin, PERL6, TEXT, SCM chicken, PYP3, CLOJ, COB, FS

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