Problem C. Stonebag

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	1024 mebibytes

You are given n piles of stones, labeled by integers from 1 to n. The i-th pile initially contains a_i stones. You also have a bag, which is initially empty.

You may perform the following operations, any number of times, in any order:

- Choose a pile that is not empty, remove **one** stone from this pile, and put it into the bag.
- Choose a pile (possibly empty), remove **exactly** n stones from the bag, and put all these n stones into the chosen pile. This operation can be performed only when the bag contains at least n stones.

You may stop performing operations at any time. In the end, the bag may contain any (possibly nonzero) number of stones.

Determine how many distinct final configurations of the n piles can be obtained from the initial configuration by performing a finite sequence of operations. Output the answer modulo 998 244 353.

Two final configurations are considered different if there exists some index i such that the number of stones in pile i differs between them. Recall that the piles are labeled and their order matters.

Input

The first line contains a single integer n ($1 \le n \le 3000$), the number of piles.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($0 \le a_i \le 10^9$), where a_i is the initial number of stones in the i-th pile.

Output

Output a single integer: the number of distinct final configurations of the piles that can be obtained, modulo 998 244 353.

Examples

standard input	*standard output*
2 1 3	15
3 2 1 3	83
8 4 3 6 5 2 0 6 3	37238603