Problem A. Permutation

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	256 mebibytes

Chiaki has a permutation $p_1, p_2, \ldots, p_n$ of integers $1, 2, \ldots, n$ with some unknown positions. She would like to know the number of ways to fill the unknown positions such that the resulting permutation contains a subsequence of length at least 3 that is an arithmetic progression.

As the number may be very large, you are only asked to calculate it modulo $10^9 + 7$.

Input

There are multiple test cases. The first line of input contains an integer T, indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \le n \le 50$): the length of the permutation.

The second line contains n integers $p_1, p_2, \ldots, p_n$ ($0 \le p_i \le n$), where $p_i = 0$ means that p_i is unknown, and all non-zero elements are distinct.

It is guaranteed that the sum of n in all test cases does not exceed 50.

Output

For each test case, output an integer denoting the answer.

Example

standard input	standard output
2 3 0 0 0 7 1 0 3 0 0 6 0	2 21