Problem K. K nodes and K edges

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Teacher Mai has a directed graph with k nodes and k edges. This graph is special: Out degree of each node is 1, and there is no self loop.

For every node Teacher Mai wrote down a set of nodes which directly links to this node.

For example, the graph contains 4 edges: $\{1 \to 2, 2 \to 4, 3 \to 1, 4 \to 1\}$, the set of each node is $\{3, 4\}, \{1\}, \{\}, \{2\}$.

But Teacher Mai found that he forgot writing which node the set belonged to.

Teacher Mai wanted to recover it, but he found there are many graphs with the same node sets.

You should count the number of different graphs have the same node sets as the given one.

The number can be very large, just output the number modulo $(10^9 + 7)$.

If there is no solution, the answer must be 0.

Input

There are no more than 80 test cases, terminated by a line with one zero.

For each test case, the first line contains a integer n $(1 \le k \le 1000)$.

The following are k lines representing the set of each node. For every line, there is a integer p first, indicating the size of the set. Then there are p integers, indicating the node with index from 1 to k in this set.

Output

For each test case print the answer of problem — number of different graphs from the statement modulo $10^9 + 7$.

Example

standard input	standard output
6 1 1 0 0 0 2 2 3 3 4 5 6 0	38