

## 4309 Cycles and more cycles

You are given a connected undirected graph  $G = (V, E)$ , and a list of special nodes. This list gives the order in which the special nodes must be visited.

Your task is to count the number of Hamiltonian cycles such that the special nodes are visited in order. To avoid confusions with the rotations the cycle always start at the first special node.

A Hamiltonian path is a path in an undirected graph which visits each vertex exactly once.

### Input

The first line will be the number of test cases. For each test case you will receive  $n$  ( $2 \leq n \leq 15$ ), the number of nodes. Then  $n$  lines with  $n$  numbers, where the  $j$ -th position of the  $i$ -th line is '1' if there is a connection between the  $i$ -th node and the  $j$ -th node, '0' if there is not connection. Then  $k$  ( $1 \leq k \leq n$ ) the number of special nodes, followed by  $k$  lines indicating the numbers of the special nodes.

### Output

The number of Hamiltonian cycles asked in the description. As the result could be a large number print the result *modulo* 98765431.

### Explanations:

First test case: 1 0 3 2, 1 0 2 3, 1 2 0 3, 1 2 3 0, 1 3 0 2, 1 3 2 0

Second test case: 0 1

### Sample Input

```
2
4
0 1 1 1
1 0 1 1
1 1 0 1
1 1 1 0
2
1
2
2
0 1
1 0
1
0
```

### Sample Output

```
6
1
```