Birthday Assignment

Nikita has a family tree T consisting of N members number from 1 to N. Each of the $N-1$ edges in the tree represents a directed relationship. Basically if there is an edge from member A to B, it means B was born before A. Now, Nikita knows that these N members were born in last M days and only 1 person was born on a single day, She is interested in calculating the number of ways to assign birthdays to each of the N family members.

Since the required answer can be quite large, print it modulo $10^9 + 7$.

Input Format

First line of input contains a single integer T denoting the number of test cases.
First line of each test case contains 2 space separated integers denoting N and M respectively.
Next $N-1$ lines of each test case contains 2 space separated integers A and B denoting a direct relationship from A to B.

Constraints

- $1 \leq T \leq 5$
- $1 \leq N \leq 1000$
- $1 \leq A, B \leq N$
- $1 \leq M \leq 10^9$

Scoring

- $1 \leq N = M \leq 9$ for 20% test data.
- $1 \leq N \leq 100$ for 20% test data.
- $1 \leq N \leq 1000$ for 60% test data.

Output Format

Output consists of only T line. For each line, Print required answer modulo $10^9 + 7$.

Sample Input 0

```
2
3 4
1 2
2 3
3 4
1 2
3 2
```

Sample Output 0

```
4
8
```

Explanation 0

- For 1^{st} test case, birthdays can be assigned as follows.
  - {3, 2, 1}, 1^{st} member was born on day 3, 2^{nd} on day 2, 3^{rd} on day 1.
  - {4, 3, 1}, 1^{st} member was born on day 4, 2^{nd} on day 3, 3^{rd} on day 1.
  - {4, 2, 1}, 1^{st} member was born on day 4, 2^{nd} on day 2, 3^{rd} on day 1.
  - {4, 3, 2}, 1^{st} member was born on day 4, 2^{nd} on day 3, 3^{rd} on day 2.