# Quantum Network

*Filename:* `quantum`

Qupee is a subatomic particle living in a network of nodes. Due to the laws of quantum mechanics, we can never know where Qupee is with certainty at any point in time, since by finding its position we alter it. However, we do know some things. At time t = 0, Qupee may be at any of the nodes in the network with equal probability. At every integer time afterwards, Qupee moves to a random node that is adjacent to its current position with uniform probability. For example, if three nodes are adjacent to Qupee's current position, the probability that Qupee will move to each of these nodes is ⅓. We wish to determine the probability that Qupee has passed through node $x$ by time t = $k$, inclusive.

**The Problem:**

Given a network of nodes, determine the probability that Qupee has passed through node $x$ by time t = $k$.

**The Input:**

The first line of the input file begins with a single, positive integer, $t$, representing the number of queries. For each query, multiple lines follow. The first contains a four integers $1 \leq n, m \leq 100$, representing the number of nodes and the number of adjacencies in the network, as well as $1 \leq x \leq n$ and $0 \leq k \leq 100$, as described in the problem statement. The next $m$ lines include two integers $1 \leq u, v \leq n$, $u \neq v$, meaning that nodes $u$ and $v$ are adjacent. It is guaranteed that through a series of adjacencies, Qupee can reach each node from every other node.

**The Output:**

For each query, output a single line saying "`Network #i: c`" without the quotes, where `i` is the number of the query, and `c` is the probability that Qupee passed through node $x$ at time t = $k$. Find the probability as an integer fraction P/Q, and print it in the form $P*Q^{-1}$ modulo 1,000,000,007.

**Sample Input:**

```
3
3 2 1 3
1 2
2 3
3 2 2 2
1 2
2 3
6 6 1 0
1 2
2 3
```

```
3 4
4 5
5 6
6 1
```

**Sample Output:**

```
Network #1: 750000006
Network #2: 1
Network #3: 166666668
```

**Note:** The probabilities in the samples are equal to: ¾, 1, and ⅙, respectively.