

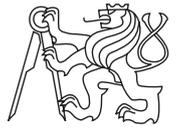


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CTU Open Contest 2016

Tree Stands

`huntsmen.c`, `huntsmen.cpp`, `huntsmen.c11`, `Huntsmen.java`, `huntsmen.py`

Tree stands are elevated wooden platforms attached to trees. Typically, hunters use tree stands to watch or to shoot their prey.

In our county, hunters have built a remarkable system of tree stands. The tree stands are connected by narrow straight paths which form a kind of maze on the hunting grounds. The builders wanted to minimize the impact on the environment and so they built the minimum possible number of paths which ensure that there is a connection between any two tree stands. Also, a tree stand is visible from another stand if and only if the two are connected by a path.

A group of local hunters wants to find out which particular tree stands will serve the best their hunting interests. Each day they climb a different set of tree stands and watch the wildlife.

There are a few more important circumstances to consider:

- Security rules dictate that any occupied tree stand must be visible from at least one other occupied tree stand so that in case of an emergency the hunter in the neighbour tree stand can come to help the colleague.
- A tree stand is always occupied by at most one hunter.
- It does not matter which hunter is in which tree stand. It only matters which tree stands are occupied and which are not.
- The size of the group does not change.

How many days will the group spend in the tree stands before they investigate all possible choices of tree stands available to them?

Input Specification

There are more test cases. Each case starts with a line containing two integers N and K ($2 \leq K \leq N \leq 200$) separated by space. N is the number of tree stands, K is the size of the group of hunters. The tree stands are labeled $1, 2, 3, \dots, N$.

Next, there are $N - 1$ lines, each line specifies one path between two tree stands. The line contains the labels of the stands separated by a space. The order of the labels on a line and the order of the paths in the input is arbitrary.

Output Specification

For each test case, print on a separate line the number of days which the group will spend in the tree stands. Express the result modulo $1\,000\,000\,007$.

Sample Input

4 3
1 2
1 4
1 3
5 4
1 2
2 3
3 4
4 5

Output for Sample Input

3
3