Problem M. The Maximum Unreachable Node Set

In this problem, we would like to talk about unreachable sets of a **directed acyclic graph** $G = (V, E)$. In mathematics a directed acyclic graph (DAG) is a directed graph with no directed cycles. That is a graph such that there is no way to start at any node and follow a consistently-directed sequence of edges in E that eventually loops back to the beginning again.

A node set denoted by $V_{UR} \subset V$ containing several nodes is known as an unreachable node set of G if, for each two different nodes u and v in V_{UR}, there is no way to start at u and follow a consistently-directed sequence of edges in E that finally archives the node v. You are asked in this problem to calculate the size of the **maximum unreachable node set** of a given graph G.

Input

The input contains several test cases and the first line contains an integer T ($1 \leq T \leq 500$) which is the number of test cases.

For each case, the first line contains two integers n ($1 \leq n \leq 100$) and m ($0 \leq m \leq n(n-1)/2$) indicating the number of nodes and the number of edges in the graph G. Each of the following m lines describes a directed edge with two integers u and v ($1 \leq u, v \leq n$ *and* $u \neq v$) indicating an edge from the u-th node to the v-th node. All edges provided in this case are distinct.

We guarantee that all directed graphs given in input are DAGs and the sum of m in input is smaller than 500000.

Output

For each test case, output an integer in a line which is the size of the maximum unreachable node set of G.

Sample

3 4 4 1 2 1 3 2 4 3 4 4 3 1 2 2 3 3 4 6 5 1 2 4 2 6 2 2 3 2 5	2 1 3

This page intentionally left blank.