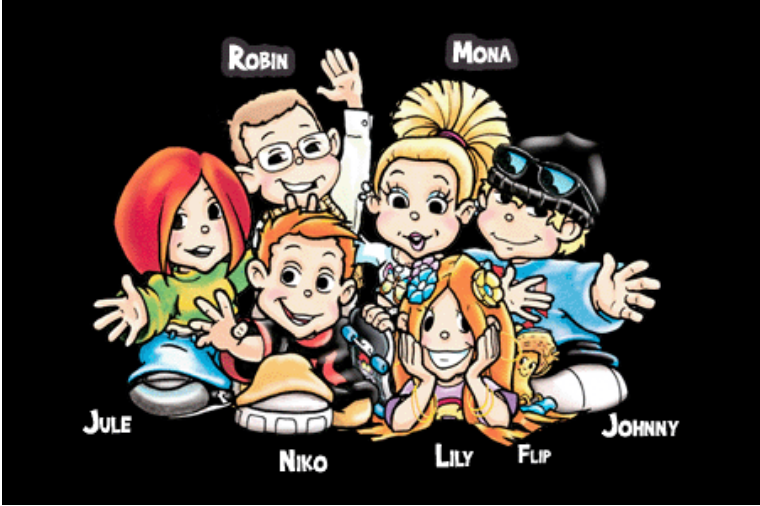


## 11324 The Largest Clique

Given a directed graph  $G$ , consider the following transformation. First, create a new graph  $T(G)$  to have the same vertex set as  $G$ . Create a directed edge between two vertices  $u$  and  $v$  in  $T(G)$  if and only if there is a path between  $u$  and  $v$  in  $G$  that follows the directed edges only in the forward direction. This graph  $T(G)$  is often called the *transitive closure* of  $G$ .

We define a *clique* in a directed graph as a set of vertices  $U$  such that for any two vertices  $u$  and  $v$  in  $U$ , there is a directed edge either from  $u$  to  $v$  or from  $v$  to  $u$  (or both). The size of a clique is the number of vertices in the clique.



### Input

The number of cases is given on the first line of input. Each test case describes a graph  $G$ . It begins with a line of two integers  $n$  and  $m$ , where  $0 \leq n \leq 1000$  is the number of vertices of  $G$  and  $0 \leq m \leq 50,000$  is the number of directed edges of  $G$ . The vertices of  $G$  are numbered from 1 to  $n$ . The following  $m$  lines contain two distinct integers  $u$  and  $v$  between 1 and  $n$  which define a directed edge from  $u$  to  $v$  in  $G$ .

### Output

For each test case, output a single integer that is the size of the largest clique in  $T(G)$ .

### Sample Input

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

### Sample Output

```
4
```