

Problem C. Leshphon

Input file: **standard input**
Output file: **standard output**
Time limit: 5 seconds
Memory limit: 512 megabytes

Leshphon was a peaceful and beautiful village in Byteland until the nasty disease came here. There are n districts in Leshphon, connected by m directed roads such that you can reach every other district from any district via these directed roads. In other words, it is strongly connected.

To control the sources of infection and cut off the channels of transmission, the government of Byteland decides to close exactly three directed roads in Leshphon, such that the village is not strongly connected anymore. There may be many possible solutions, can you figure out the total number of them?

Input

The first line contains a single integer T ($1 \leq T \leq 10$), the number of test cases. For each test case:

The first line contains two integers n and m ($3 \leq n \leq 50$, $3 \leq m \leq n(n-1)$), denoting the number of districts and the number of roads.

Each of the following m lines contains two integers u_i and v_i ($1 \leq u_i, v_i \leq n$, $u_i \neq v_i$), describing a directed road from the u_i -th district to the v_i -th district.

It is guaranteed that the village is strongly connected, and all the given m roads are pairwise different.

Output

For each test case, output a single line containing an integer, denoting the number of solutions.

Example

standard input	standard output
1 4 7 1 2 2 3 3 4 4 1 1 3 2 4 3 1	34