



Y — Teams

Once a year, as a head of your department, you have to send several teams to a programming contest. You have already chosen a set of talented students, but you still have to group them teams of three. In order to increase the chances of winning, you decided to send as many teams as possible. However, this task is not as easy as it seemed to be. Each of the selected students wants to be in one team only with just a few of his or her friends. Luckily, their feelings are mutual: if student A may be in a team with student B , then student B may be in a team with student A .

Multiple Test Cases

The input contains several test cases. The first line of the input contains a positive integer $Z \leq 20$, denoting the number of test cases. Then Z test cases follow, each conforming to the format described in section *Single Instance Input*. For each test case, your program has to write an output conforming to the format described in section *Single Instance Output*.

Single Instance Input

The first line of the input instance contains two integers n and m separated by a single space, where $n \in [1, 10^5]$ is the number of students and $m \geq 0$. Students are numbered from 1 to n . Then m lines follow, each containing a pair of space separated numbers A and B , meaning that students A and B may be in one team. Each student's number appears at most three times (they are very picky about choosing their teammates). If there is a line containing pair (A, B) , then there will be no other line containing (A, B) or (B, A) .

Single Instance Output

You should output one line containing a single number: the maximal number of teams which can be created.

Example

Input	Output
2	1
3 3	0
1 2	
2 3	
3 1	
4 4	
1 2	
2 3	
3 4	
4 1	