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F. Non-academic Problem

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given a connected undirected graph, the vertices of which are numbered with integers from 1 to n . Your task is to minimize the number of pairs of vertices $1 \leq u < v \leq n$ between which there exists a path in this graph. To achieve this, you can remove exactly one edge from the graph.

Find the smallest number of pairs of vertices!

Input

Each test consists of several sets of input data. The first line contains a single integer t ($1 \leq t \leq 10^4$) — the number of sets of input data. Then follows their description.

The first line of each set of input data contains two integers n and m ($2 \leq n \leq 10^5$, $n - 1 \leq m \leq \min(10^5, \frac{n \cdot (n-1)}{2})$) — the number of vertices in the graph and the number of edges.

Each of the next m lines contains two integers u and v ($1 \leq u, v \leq n, u \neq v$), indicating that there is an undirected edge in the graph between vertices u and v .

It is guaranteed that the given graph is connected and without multiple edges.

It is guaranteed that the sum of n and the sum of m over all sets of input data does not exceed $2 \cdot 10^5$.

Output

For each set of input data, output the smallest number of pairs of reachable vertices, if exactly one edge can be removed.

Example

input

Copy

```
6
2 1
1 2
3 3
1 2
2 3
1 3
5 5
1 2
1 3
3 4
4 5
5 3
6 7
1 2
1 3
2 3
3 4
4 5
4 6
5 6
5 5
```

Codeforces Round 954 (Div. 3)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win)

Choose file: Choose File No file chosen

Submit

→ Contest materials

- Announcement
- Tutorial #1 (en)
- Tutorial #2

```

1 2
1 3
2 3
2 4
3 5
10 12
1 2
1 3
2 3
2 4
4 5
5 6
6 7
7 4
3 8
8 9
9 10
10 8

```

output

Copy

```

0
3
4
6
6
21

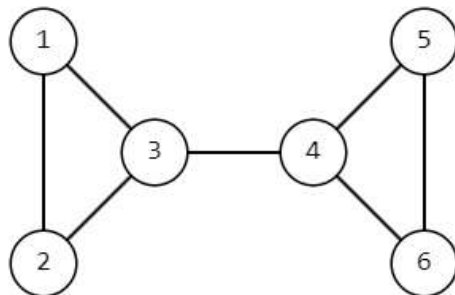
```

Note

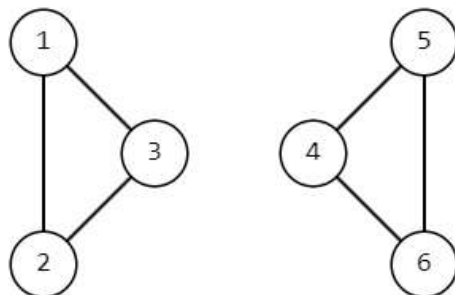
In the first set of input data, we will remove the single edge $(1, 2)$ and the only pair of vertices $(1, 2)$ will become unreachable from each other.

In the second set of input data, no matter which edge we remove, all vertices will be reachable from each other.

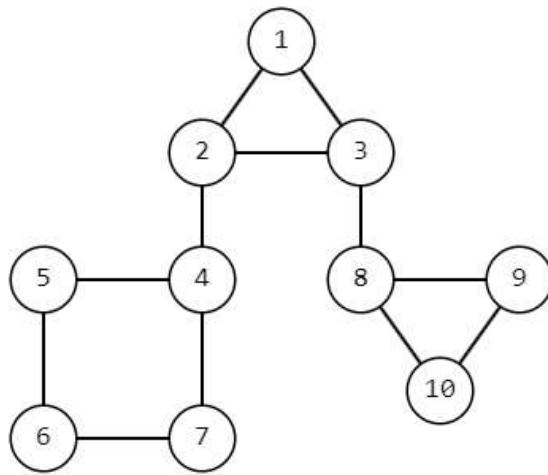
In the fourth set of input data, the graph looks like this initially.



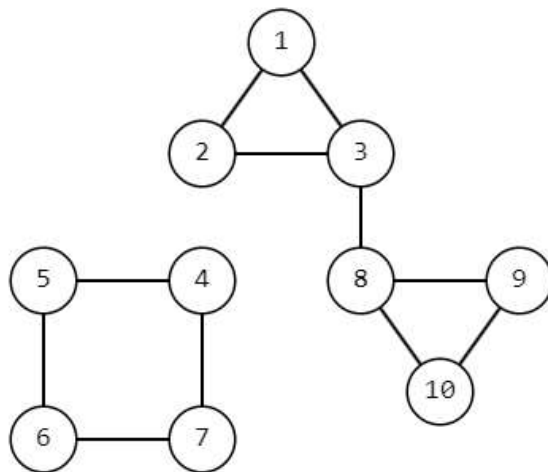
We will remove the edge $(3, 4)$ and then the only reachable pairs of vertices will be $(1, 2)$, $(1, 3)$, $(2, 3)$, $(4, 5)$, $(4, 6)$, $(5, 6)$.



In the sixth set of input data, the graph looks like this initially.



After removing the edge $(2, 4)$, the graph will look like this. Thus, there will be 21 pairs of reachable vertices.



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