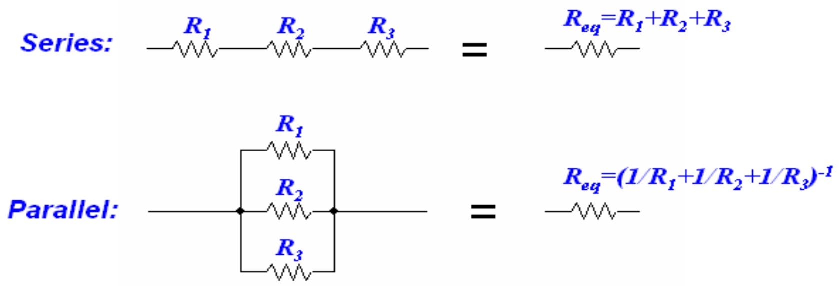
Problem H: Hobbit's Resistor Graphs
Time Limit: 5 seconds

Description



Hobbit has only learnt the parallel and series method of calculating resistance across an electric network graph where there is a single resister on every edge of the undirected graph **G**. Given an undirected graph **G**, and 2 vertices **u** and **v**, if it is possible to calculate the resistance between **u** and **v** using only these 2 rules shown above, then the graph **G** is called series-parallel decomposible (sp-decomposible for short) with resect to (**u**, **v**). In other words, **G** may be turned into just the 2 node graph of **u**, **v** connected by one edge, by a sequence of the following operations: (a) Replacement of a pair of parallel edges with a single edge that connects their common endpoints; (b) Replacement of a pair of edges incident to a vertex of degree 2 other than **u** or **v** with a single edge.

Input

The input contains multiple sets of data.   The first line of each set contains 2 positive integers **n** ($1 \le$ **n** ≤ 100000), and **m** ($1 \le$ **m** ≤ 100000), which represent the number of nodes and the number of edges/resistors in the resistor network. Then, a total of m lines follows with each resister edge (**u**, **v**), such that ($1 \le$ **u**, **v** $\le$ **n**, **u** $\ne$ **v**).

Output

For each set of data, output on one line the number of unique pairs (**u**, **v**) with **u** < **v**, such that **G** is sp-decomposible with respect to (**u**, **v**).

Sample Input

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

Sample Output

```
6
```