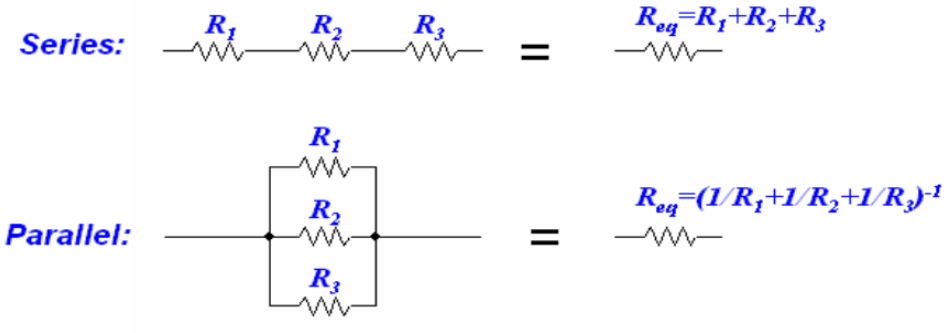
UVa Online Judge

13224 Hobbit's Resistor Graphs

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 (spdecomposible for short) with respect 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 ($1 \leq n \leq 100000$), and m ($1 \leq m \leq 100000$), 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 ($1 \leq u, v \leq n$, $u \neq v$).

Output

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

Sample Input

```
6 6
1 2
1 3
1 4
2 3
2 4
5 6
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Sample Output

```
6
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