Problem B

You are given a graph G. Determine the edge connectivity $c(G)$ of G and the number of minimum edge cuts in G.

Input and output

The first line contains two positive integers n and m ($n \leq 200$, $m \leq 1000$), the number of vertices and edges of G. The vertices are numbered from 1 to n. Each of the following m lines contains two integers u and v ($1 \leq u < v \leq n$), indicating that G contains an edge between vertices u and v. You can assume there is at most one edge between any two vertices.

Output two integers separated by a space, the edge connectivity $c(G)$ of G and the number of minimum edge cuts in G.

Example

Input:

```
4 4
1 2
2 3
3 4
1 4
```

Output:

```
2 6
```