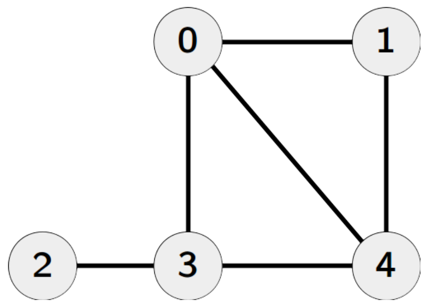
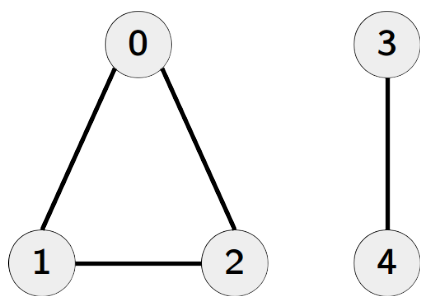
# Problem N
## Staying Connected
### Problem ID: connected

An undirected, unweighted graph $G$ is specified by a set of vertices $V$ and a set of edges $E$, where each edge connects two vertices (and, thus, is specified by a pair of vertices). For example, take this graph:




This graph is defined as $V = \{0, 1, 2, 3, 4\}$ and $E = \{(0, 1), (0, 3), (0, 4), (1, 4), (2, 3), (3, 4)\}$. Note that there is a single pair of vertices per edge (i.e., since this is an undirected graph, we do not need to include both $(0, 1)$ and $(1, 0)$ in $E$; just one is enough to specify that there exists an edge between vertex 0 and vertex 1).

In the above graph, all the vertices are *connected*. i.e., for all possible pairs of vertices $(v_1, v_2)$ in the graph, it is possible to find a path from $v_1$ to $v_2$ (e.g., vertex 0 and vertex 2 are not directly connected with an edge, but you can reach vertex 2 from vertex 0 by going through vertex 3). Here is an example of a graph where all the vertices are *not* connected:




This graph is defined as $V = \{0, 1, 2, 3, 4\}$ and $E = \{(0, 1), (0, 2), (1, 2), (3, 4)\}$. Note that this does not specify two graphs, but rather a single graph with two *connected components*. A connected component is a subgraph $G'$ of a graph $G$ such that, for every possible pair of vertices in $G'$, there exists a path between those vertices *and* there are no paths in $G$ that connect the vertices in $G'$ to any of the other vertices in $G$. So, the two connected components in the above graph are $V_1 = \{0, 1, 2\}$ and $V_2 = \{3, 4\}$.

As a counterexample, vertices $\{0, 1\}$ would not be a connected component because, although there does exists a path between all possible pairs of vertices (in this case, just 0 and 1), the graph also contains paths connecting 0 and 1 to other vertices in the graph.

You will write a program that, given the specification of a graph $G$, will count the number of connected components in that graph.

## Input

The input contains the specification of a single graph $G$. The first two lines contain the number of vertices $|V|$ ($1 \leqslant |V| \leqslant 200$) and the number of edges $|E|$ ($0 \leqslant |E| \leqslant \frac{|V|\cdot(|V|-1)}{2}$). The input is followed by $|E|$ lines, each containing a pair of integers separated by a single space. This pair of integers specifies the vertices connected by that edge. We assume that vertices are numbered from 0 (so, if $|V| = 4$ then $V = \{0, 1, 2, 3\}$).

Note that the two sample inputs correspond to the two example graphs shown above.

## Output

You must print a single integer: the number of connected components in $G$.

| Sample Input 1 | Sample Output 1 |
|---|---|
| 5<br>6<br>0 1<br>0 3<br>0 4<br>1 4<br>2 3<br>3 4 | 1 |

| Sample Input 2 | Sample Output 2 |
|---|---|
| 5<br>4<br>0 1<br>0 2<br>1 2<br>3 4 | 2 |