

## **Problem 1**

Given a graph  $G$  on  $n$  nodes, with nodes labeled from 1 to  $n$ , and a list of edges, print the number of connected components after addition of each edge.

First line of the input specifies the number of vertices.

Lines following are a pair of vertices ( $v_1, v_2$ ) between which the edge is to be inserted.

Read the edges until '\$' is encountered.

### **Sample Input:**

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

### **Sample Output:**

```
6
5
4
4
4
4
3
```