Task long

Given is an undirected graph. A cycle is a sequence of distinct vertices, v_1, v_2, …, v_k, such that $v_1=v_k$ and there exists an edge (v_i , v_i+1) for any i=1, 2…, k-1. The value of k is called the length of the cycle.

Input: The first row contains two numbers: n - the number of vertices and m - the number of edges in the given graph. The vertices are numbered with integers from 1 to n. On each of the remaining m rows of the input, there are given two values: numbers of both ends of an edge.

Output: an integer equals to the largest k.

Constraints: 0 <n <100 and each vertex has no more than 100 neighbors.

Example:

Input

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

Output

```
3
```