

## Problem E. Cyclic Components

**Time limit** 2000 ms

**Mem limit** 262144 kB

You are given an undirected graph consisting of  $n$  vertices and  $m$  edges. Your task is to find the number of connected components which are cycles.

Here are some definitions of graph theory.

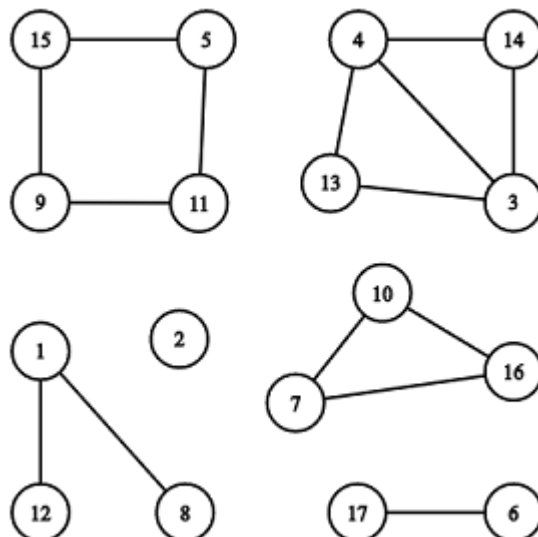
An undirected graph consists of two sets: set of nodes (called vertices) and set of edges. Each edge connects a pair of vertices. All edges are bidirectional (i.e. if a vertex  $a$  is connected with a vertex  $b$ , a vertex  $b$  is also connected with a vertex  $a$ ). An edge can't connect vertex with itself, there is at most one edge between a pair of vertices.

Two vertices  $u$  and  $v$  belong to the same connected component if and only if there is at least one path along edges connecting  $u$  and  $v$ .

A connected component is a cycle if and only if its vertices can be reordered in such a way that:

- the first vertex is connected with the second vertex by an edge,
- the second vertex is connected with the third vertex by an edge,
- ...
- the last vertex is connected with the first vertex by an edge,
- all the described edges of a cycle are distinct.

A cycle doesn't contain any other edges except described above. By definition any cycle contains three or more vertices.



There are 6 connected components, 2 of them are cycles:  $[7, 10, 16]$  and  $[5, 11, 9, 15]$ .

### Input

The first line contains two integer numbers  $n$  and  $m$  ( $1 \leq n \leq 2 \cdot 10^5$ ,  $0 \leq m \leq 2 \cdot 10^5$ ) — number of vertices and edges.

The following  $m$  lines contains edges: edge  $i$  is given as a pair of vertices  $v_i, u_i$  ( $1 \leq v_i, u_i \leq n$ ,  $u_i \neq v_i$ ). There is no multiple edges in the given graph, i.e. for each pair  $(v_i, u_i)$  there no other pairs  $(v_i, u_i)$  and  $(u_i, v_i)$  in the list of edges.

### Output

Print one integer — the number of connected components which are also cycles.

#### Sample 1

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

#### Sample 2

| Input  | Output |
|--|--------|
| 17 15<br>1 8<br>1 12<br>5 11<br>11 9<br>9 15<br>15 5<br>4 13<br>3 13<br>4 3<br>10 16<br>7 10<br>16 7<br>14 3<br>14 4<br>17 6 | 2      |

### Note

In the first example only component  $[3, 4, 5]$  is also a cycle.

The illustration above corresponds to the second example.