The FME graph (1) P62285_en

A rookie is curious about what the FME graph is. After some days, he learns that it is an undirected graph where the vertices are the FME students, and there is an edge between x and y if they had an affair at some moment. There is no more than one edge between each pair x and y, nor edges of the kind x x.

Suppose that someone gives you the number of vertices n and the number of edges m. With this information, can you tell if the graph is connected, if it is not, or that you are being fooled?

Input

Input consists of several cases. Every case has the supposed numbers of vertices and edges of an undirected graph. You can assume $2 \leq n \leq 10^9$ and $0 \leq m \leq 10^9$.

Output

For every case, tell if you can assure that the graph is connected, if you can assure that the graph is not connected, if it is impossible that such a graph exists, or if we are in none of those situations.

Sample input 1

```
4 4
142857 42
2 2
1000000000 1000000000
```

Sample output 1

```
connected
disconnected
you've been trolled
impossible to know
```

Problem information

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