Task: PAR
Parade

UFAM Workshop, contest #1. Source file `par.*` Available memory: 128 MB.

Every year, to celebrate the beginning of spring, the Big ByteSpring Parade marches down the streets of Byteburg. This year, his majesty Byteasar XVI will graced it by his presence. The Byteburg's street network consists of n intersections linked by $n-1$ two-way street segments in such a way that every intersection is reachable from every other intersection.

The exact route of the parade is not determined yet, but it is known that it will start in one intersection, follow a certain number of street segments, and end in a *different* intersection. To keep the paraders entertained, the route will traverse each street segment at most once.

More importantly, to ensure the paraders' safety, every street segment such that exactly one of its endpoints is on the parade's route (including the initial and final intersection) should be closed to traffic. Your goal is to determine the maximum number of street segments that may have to be closed.

Input

In the first line of the standard input, there is a single integer n ($2 \leq n \leq 200\,000$), specifying the number of intersections in Byteburg. The intersections are numbered from 1 to n.

The following $n-1$ lines describe Byteburg's street network. Each of these lines contains two integers a and b ($1 \leq a, b \leq n$, $a \neq b$), separated by a single space, which indicate that the intersections no. a and b are linked by a two-way street segment.

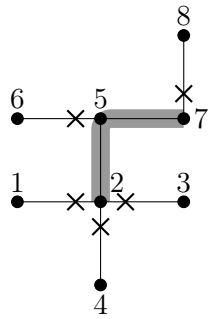
Output

A single integer should be printed in the first and only line of the standard output: the maximum number of street segments that may have to be closed in order to secure the parade.

Example

For the input data:

```
8
1 2
2 3
4 2
5 2
6 5
5 7
7 8
```



the correct result is:

```
5
```

Explanation of the example: If the parade starts in intersection 2 and ends in intersection 7, 5 street segments will have to be closed: (2,1), (2,3), (2,4), (5,6), (7,8), where (a, b) stands for the segment linking intersections no. a and b.