Singular Nodes

We say a node in a binary tree is *singular* if the sum of the values of its ancestors equals the sum of the values of its descendants. Code an algorithm that, provided a binary tree of integer numbers, returns the number of singular nodes that it contains.

Apart from coding the algorithm, justify its complexity.

Input

Source code is provided to read the trees.

Output

For each test case, the output must be the number of nodes in the tree that are singular.

Sample input

```
#
[0]
[5]
(([4]3[-3])1[-4])
```

Sample output

```
0
1
1
2
```

Notes

This exercise must be understood in the context of the *Data Structures and Algorithms* course, FDI-UCM 2016/2017 (prof. Gonzalo Méndez). Therefore, the only valid solutions are those that use the concepts studied in this course. Additional remarks may be provided in class.