Problem H. Longest Regular Bracket Sequence

Time limit 2000 ms
Mem limit 262144 kB

This is yet another problem dealing with regular bracket sequences.

We should remind you that a bracket sequence is called regular, if by inserting «+» and «1» into it we can get a correct mathematical expression. For example, sequences «(())()», «()» and «(()(()))» are regular, while «)(», «(()» and «(())((» are not.

You are given a string of «(» and «)» characters. You are to find its longest substring that is a regular bracket sequence. You are to find the number of such substrings as well.

Input

The first line of the input file contains a non-empty string, consisting of «(» and «)» characters. Its length does not exceed 10^6.

Output

Print the length of the longest substring that is a regular bracket sequence, and the number of such substrings. If there are no such substrings, write the only line containing "0 1".

Sample 1

Input	Output
)((())))(()())	6 2

Sample 2

Input	Output
))(	0 1