C. Longest Regular Bracket Sequence

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".

Examples

input
)((())))(()())

output
6 2

input
))(

output
0 1