

C. Longest Regular Bracket Sequence

time limit per test: 2 seconds
 memory limit per test: 256 megabytes

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	Copy
) ((())) ((())	
output	Copy
6 2	

input	Copy
)) (
output	Copy
0 1	

→ Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round 5

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

→ Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

→ Submit?

Language: [GNU G++23 14.2 \(64 bit, ms\)](#) ▼

Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions

Submission	Time	Verdict
323372880	Jun/08/2025 13:45	Accepted




→ Problem tags

[constructive algorithms](#) [data structures](#)

[dp](#) [greedy](#) [sortings](#) [strings](#) [*1900](#)

No tag edit access

→ **Contest materials**

- Codeforces Beta Round #5 
- Tutorial #1 (en) 
- C, D и E с CBR5 - разбор (ru) 

[Codeforces](#) (c) Copyright 2010-2025 Mike Mirzayanov
The only programming contests Web 2.0 platform
Server time: Jun/08/2025 17:45:16^{UTC+7} (i1).
Desktop version, switch to [mobile version](#).
[Privacy Policy](#) | [Terms and Conditions](#)

Supported by



ITMO