B. Regular Bracket Sequence

A bracket sequence is called regular if it is possible to obtain correct arithmetic expression by inserting characters «+» and «1» into this sequence. For example, sequences « (()) () », « () » and « (() (())) » are regular, while «) (», « (() » and « (())) (» are not.

One day Johnny got bracket sequence. He decided to remove some of the brackets from it in order to obtain a regular bracket sequence. What is the maximum length of a regular bracket sequence which can be obtained?

Input

Input consists of a single line with non-empty string of « (» and «) » characters. Its length does not exceed 10^6.

Output

Output the maximum possible length of a regular bracket sequence.

Examples

input
(())(
output
4

input
((()())
output
6