A parentheses string is valid if and only if:

* It is the empty string,
* It can be written as AB (A concatenated with B), where A and B are valid strings, or
* It can be written as (A), where A is a valid string.

You are given a parentheses string s. In one move, you can insert a parenthesis at any position of the string.

* For example, if s = "()))", you can insert an opening parenthesis to be "(**(**)))" or a closing parenthesis to be "())**)**)".

Return *the minimum number of moves required to make* s *valid*.

**Example 1:**

Input: s = "())"  
Output: 1

**Example 2:**

Input: s = "((("  
Output: 3

**Constraints:**

* 1 <= s.length <= 1000
* s[i] is either '(' or ')'.