5470. Minimum Insertions to Balance a Parentheses String

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Given a parentheses string s containing only the characters '(' and ')'. A parentheses string is **balanced** if:

- Any left parenthesis '(' must have a corresponding two consecutive right parenthesis '))'.
- Left parenthesis '(' must go before the corresponding two consecutive right parenthesis '))'.

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For example, "())", "())(())))" and "(())()))" are balanced, ")()", "()))" and "(()))" are not balanced.
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You can insert the characters '(' and ')' at any position of the string to balance it if needed.

Return the minimum number of insertions needed to make s balanced.

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User Accepted: 724
User Tried: 1301
Total Accepted: 728
Total Submissions: 2051
Difficulty: Medium
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Example 1:

```
Input: s = "(()))"
Output: 1
Explanation: The second '(' has two matching '))', but the first '(' has only ')' matching
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Example 2:

```
Input: s = "())"
Output: 0
Explanation: The string is already balanced.
```

Example 3:

```
Input: s = "))())("
Output: 3
Explanation: Add '(' to match the first '))', Add '))' to match the last '('.
```

Example 4:

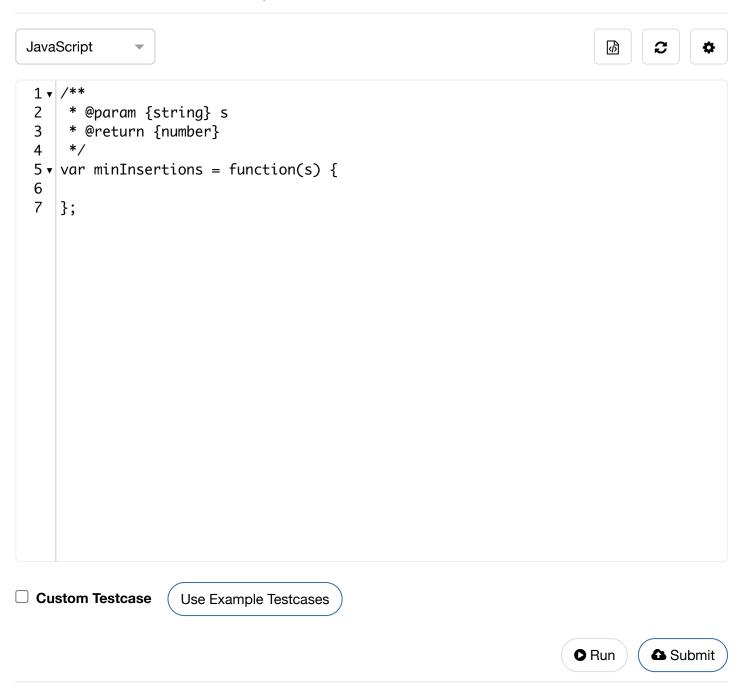
```
Input: s = "(((((("
Output: 12
Explanation: Add 12 ')' to balance the string.
```

Example 5:

```
Input: s = ")))))))"
Output: 5
Explanation: Add 4 '(' at the beginning of the string and one ')' at the end. The string t
```

Constraints:

- 1 <= s.length <= 10^5
- s consists of '(' and ')' only.



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