A parentheses string is a **non-empty** string consisting only of '(' and ')'. It is valid if **any** of the following conditions is **true**:

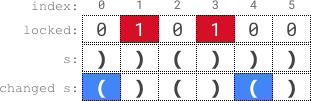
* It is ().
* It can be written as AB (A concatenated with B), where A and B are valid parentheses strings.
* It can be written as (A), where A is a valid parentheses string.

You are given a parentheses string s and a string locked, both of length n. locked is a binary string consisting only of '0's and '1's. For **each** index i of locked,

* If locked[i] is '1', you **cannot** change s[i].
* But if locked[i] is '0', you **can** change s[i] to either '(' or ')'.

Return true *if you can make s a valid parentheses string*. Otherwise, return false.

**Example 1:**



Input: s = "))()))", locked = "010100"  
Output: true  
Explanation: locked[1] == '1' and locked[3] == '1', so we cannot change s[1] or s[3].  
We change s[0] and s[4] to '(' while leaving s[2] and s[5] unchanged to make s valid.

**Example 2:**

Input: s = "()()", locked = "0000"  
Output: true  
Explanation: We do not need to make any changes because s is already valid.

**Example 3:**

Input: s = ")", locked = "0"  
Output: false  
Explanation: locked permits us to change s[0].   
Changing s[0] to either '(' or ')' will not make s valid.

**Constraints:**

* n == s.length == locked.length
* 1 <= n <= 105
* s[i] is either '(' or ')'.
* locked[i] is either '0' or '1'.