Given a string n representing an integer, return *the closest integer (not including itself), which is a palindrome*. If there is a tie, return ***the smaller one***.

The closest is defined as the absolute difference minimized between two integers.

**Example 1:**

**Input:** n = "123"

**Output:** "121"

**Example 2:**

**Input:** n = "1"

**Output:** "0"

**Explanation:** 0 and 2 are the closest palindromes but we return the smallest which is 0.

**Constraints:**

* 1 <= n.length <= 18
* n consists of only digits.
* n does not have leading zeros.
* n is representing an integer in the range [1, 1018 - 1].