Given a positive integer n, you can apply one of the following operations:

1. If n is even, replace n with n / 2.
2. If n is odd, replace n with either n + 1 or n - 1.

Return *the minimum number of operations needed for* n *to become* 1.

**Example 1:**

Input: n = 8  
Output: 3  
Explanation: 8 -> 4 -> 2 -> 1

**Example 2:**

Input: n = 7  
Output: 4  
Explanation: 7 -> 8 -> 4 -> 2 -> 1  
or 7 -> 6 -> 3 -> 2 -> 1

**Example 3:**

Input: n = 4  
Output: 2

**Constraints:**

* 1 <= n <= 231 - 1