**Integer Replacement**

**Difficulty:** Medium

**Scenario**

In a kingdom far away, there exists a magical number that all mathematicians are fascinated with: the number 1. You are tasked with transforming any given positive integer n into this magical number 1 using the least number of operations. You have the following magical operations at your disposal:

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

Your goal is to determine the minimum number of operations needed to transform the given number n into 1.

**Problem Statement**

Given a positive integer n, return the minimum number of operations needed for n to become 1.

**Input Format**

* The first line contains a single integer n.

**Output Format**

* A single integer represents the minimum number of operations needed for n to become 1.

**Constraints**

* 1 <= n <= 2^31-1

**Example 1**

**Input:**

8

**Output:**

3

**Explanation:**

* 8→4→2→1

**Example 2**

**Input:**

7

**Output:**

4

**Explanation:**

* 7→8→4→2→1
* 7→6→3→2→1

**Example 3**

**Input:**

4

**Output:**

2

**Explanation:**

* 4→2→14 \rightarrow 2 \rightarrow 14→2→1

**Additional Test Cases**

**Test Case 1**

**Input:**

1

**Output:**

0

**Explanation:**

* No operations are needed as n is already 1.

**Test Case 2**

**Input:**

15

**Output:**

5

**Explanation:**

* 15→16→8→4→2→115 \rightarrow 16 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 115→16→8→4→2→1
* or 15→14→7→8→4→2→115 \rightarrow 14 \rightarrow 7 \rightarrow 8 \rightarrow 4 \rightarrow 2 \rightarrow 115→14→7→8→4→2→1

**Test Case 3**

**Input:**

1000000

**Output:**

26

**Explanation:**

* Follow the sequence of operations until reaching 1.

**Test Case 4**

**Input:**

999999

**Output:**

39

**Explanation:**

* Follow the sequence of operations until reaching 1.

**Test Case 5**

**Input:**

2

**Output:**

1

**Explanation:**

* 2→12 \rightarrow 12→1