2654. Minimum Number of Operations to Make All Array Elements Equal to 1

Description

You are given a **0-indexed** array `nums` consisiting of **positive** integers. You can do the following operation on the array **any** number of times:

- Select an index `i` such that `0 <= i < n - 1` and replace either of `nums[i]` or `nums[i+1]` with their gcd value.

Return *the **minimum** number of operations to make all elements of* `nums` *equal to* `1`. If it is impossible, return `-1`.

The gcd of two integers is the greatest common divisor of the two integers.

Example 1:

```
Input: nums = [2,6,3,4]
Output: 4
Explanation: We can do the following operations:
- Choose index i = 2 and replace nums[2] with gcd(3,4) = 1. Now we have nums = [2,6,1,4].
- Choose index i = 1 and replace nums[1] with gcd(6,1) = 1. Now we have nums = [2,1,1,4].
- Choose index i = 0 and replace nums[0] with gcd(2,1) = 1. Now we have nums = [1,1,1,4].
- Choose index i = 2 and replace nums[3] with gcd(1,4) = 1. Now we have nums = [1,1,1,1].
```

Example 2:

```
Input: nums = [2,10,6,14]
Output: -1
Explanation: It can be shown that it is impossible to make all the elements equal to 1.
```

Constraints:

- `2 <= nums.length <= 50`
- `1 <= nums[i] <= 10^6`

Follow-up:

The `O(n)` time complexity solution works, but could you find an `O(1)` constant time complexity solution?