

# 2584. Split the Array to Make Coprime Products

## Description

You are given a **0-indexed** integer array `nums` of length `n`.

A **split** at an index `i` where `0 <= i <= n - 2` is called **valid** if the product of the first `i + 1` elements and the product of the remaining elements are coprime.

- For example, if `nums = [2, 3, 3]`, then a split at the index `i = 0` is valid because `2` and `9` are coprime, while a split at the index `i = 1` is not valid because `6` and `3` are not coprime. A split at the index `i = 2` is not valid because `i == n - 1`.

Return *the smallest index `i` at which the array can be split validly or `-1` if there is no such split*.

Two values `val1` and `val2` are coprime if `gcd(val1, val2) == 1` where `gcd(val1, val2)` is the greatest common divisor of `val1` and `val2`.

### Example 1:

index	prefixproduct	suffixproduct	gcd
0	4	12600	4
1	28	1800	4
2	224	225	1
3	3360	15	15
4	10080	5	5

**Input:** `nums = [4,7,8,15,3,5]`  
**Output:** `2`  
**Explanation:** The table above shows the values of the product of the first `i + 1` elements, the remaining elements, and their gcd at each index `i`. The only valid split is at index 2.

### Example 2:

index	prefixproduct	suffixproduct	gcd
0	4	12600	4
1	28	1800	4
2	420	120	60
3	3360	15	15
4	10080	5	5

**Input:** `nums = [4,7,15,8,3,5]`  
**Output:** `-1`  
**Explanation:** The table above shows the values of the product of the first `i + 1` elements, the remaining elements, and their gcd at each index `i`. There is no valid split.

### Constraints:

- `n == nums.length`
- `1 <= n <= 104`
- `1 <= nums[i] <= 106`

