

# 1994. The Number of Good Subsets

## Description

You are given an integer array `nums`. We call a subset of `nums` **good** if its product can be represented as a product of one or more **distinct prime** numbers.

- For example, if `nums = [1, 2, 3, 4]`:
  - `[2, 3]`, `[1, 2, 3]`, and `[1, 3]` are **good** subsets with products `6 = 2*3`, `6 = 2*3`, and `3 = 3` respectively.
  - `[1, 4]` and `[4]` are not **good** subsets with products `4 = 2*2` and `4 = 2*2` respectively.

Return *the number of different good subsets in* `nums` *modulo* `109 + 7`.

A **subset** of `nums` is any array that can be obtained by deleting some (possibly none or all) elements from `nums`. Two subsets are different if and only if the chosen indices to delete are different.

### Example 1:

**Input:** `nums = [1,2,3,4]`  
**Output:** 6  
**Explanation:** The good subsets are:

- `[1,2]`: product is 2, which is the product of distinct prime 2.
- `[1,2,3]`: product is 6, which is the product of distinct primes 2 and 3.
- `[1,3]`: product is 3, which is the product of distinct prime 3.
- `[2]`: product is 2, which is the product of distinct prime 2.
- `[2,3]`: product is 6, which is the product of distinct primes 2 and 3.
- `[3]`: product is 3, which is the product of distinct prime 3.

### Example 2:

**Input:** `nums = [4,2,3,15]`  
**Output:** 5  
**Explanation:** The good subsets are:

- `[2]`: product is 2, which is the product of distinct prime 2.
- `[2,3]`: product is 6, which is the product of distinct primes 2 and 3.
- `[2,15]`: product is 30, which is the product of distinct primes 2, 3, and 5.
- `[3]`: product is 3, which is the product of distinct prime 3.
- `[15]`: product is 15, which is the product of distinct primes 3 and 5.

### Constraints:

- `1 <= nums.length <= 105`
- `1 <= nums[i] <= 30`

