

843. Binary Trees With Factors

Difficulty : Medium

<https://leetcode.com/problems/binary-trees-with-factors>

Given an array of unique integers, `arr`, where each integer `arr[i]` is strictly greater than 1.

We make a binary tree using these integers, and each number may be used for any number of times. Each non-leaf node's value should be equal to the product of the values of its children.

Return *the number of binary trees we can make*. The answer may be too large so return the answer **modulo** $10^9 + 7$.

Example 1:

Input: `arr = [2,4]`

Output: 3

Explanation: We can make these trees: [2], [4], [4, 2, 2]

Example 2:

Input: `arr = [2,4,5,10]`

Output: 7

Explanation: We can make these trees: [2], [4], [5], [10], [4, 2, 2], [10, 2, 5], [10, 5, 2].

Constraints:

- $1 \leq \text{arr.length} \leq 1000$
- $2 \leq \text{arr}[i] \leq 10^9$
- All the values of `arr` are **unique**.