Problem 1726: Tuple with Same Product

Problem Information

Difficulty: Medium
Acceptance Rate: 70.12%
Paid Only: No
Tags: Array, Hash Table, Counting

Problem Description

Given an array `nums` of **distinct** positive integers, return _the number of tuples_`(a, b, c, d)`_such that_`a * b = c * d` _where_`a` _,_`b` _,_`c` _, and_`d` _are elements of_`nums` _, and_`a != b != c != d` _._

Example 1:

Input: nums = [2,3,4,6] **Output:** 8 **Explanation:** There are 8 valid tuples: (2,6,3,4) , (2,6,4,3) , (6,2,3,4) , (6,2,4,3) (3,4,2,6) , (4,3,2,6) , (3,4,6,2) , (4,3,6,2)

Example 2:

Input: nums = [1,2,4,5,10] **Output:** 16 **Explanation:** There are 16 valid tuples: (1,10,2,5) , (1,10,5,2) , (10,1,2,5) , (10,1,5,2) (2,5,1,10) , (2,5,10,1) , (5,2,1,10) , (5,2,10,1) (2,10,4,5) , (2,10,5,4) , (10,2,4,5) , (10,2,5,4) (4,5,2,10) , (4,5,10,2) , (5,4,2,10) , (5,4,10,2)

Constraints:

* `1 <= nums.length <= 1000` * `1 <= nums[i] <= 104` * All elements in `nums` are **distinct**.

Code Snippets

C++:

```
class Solution {
public:
```

```
int tupleSameProduct(vector<int>& nums) {

}
};
```

Java:

```
class Solution {
public int tupleSameProduct(int[] nums) {

}
}
```

Python3:

```
class Solution:
def tupleSameProduct(self, nums: List[int]) -> int:
```