

# 1874. Minimize Product Sum of Two Arrays Premium

Medium Topics Companies Hint

The **product sum** of two equal-length arrays `a` and `b` is equal to the sum of `a[i] * b[i]` for all `0 <= i < a.length` (**0-indexed**).

- For example, if `a = [1,2,3,4]` and `b = [5,2,3,1]`, the **product sum** would be `1*5 + 2*2 + 3*3 + 4*1 = 22`.

Given two arrays `nums1` and `nums2` of length `n`, return *the **minimum product sum** if you are allowed to rearrange the **order** of the elements in `nums1`*.

### Example 1:

**Input:** `nums1 = [5,3,4,2]`, `nums2 = [4,2,2,5]`  
**Output:** `40`  
**Explanation:** We can rearrange `nums1` to become `[3,5,4,2]`. The product sum of `[3,5,4,2]` and `[4,2,2,5]` is `3*4 + 5*2 + 4*2 + 2*5 = 40`.

### Example 2:

**Input:** `nums1 = [2,1,4,5,7]`, `nums2 = [3,2,4,8,6]`  
**Output:** `65`  
**Explanation:** We can rearrange `nums1` to become `[5,7,4,1,2]`. The product sum of `[5,7,4,1,2]` and `[3,2,4,8,6]` is `5*3 + 7*2 + 4*4 + 1*8 + 2*6 = 65`.

### Constraints:

- `n == nums1.length == nums2.length`
- `1 <= n <= 105`
- `1 <= nums1[i], nums2[i] <= 100`

Seen this question in a real interview before? 1/5

Yes No

Accepted **20.4K** | Submissions **22.8K** | Acceptance Rate **89.5%**

Topics

ArrayGreedySorting

Companies

0 - 6 months

Google2

Hint 1

Is there a particular way we should order the arrays such that the product sum is minimized?

Hint 2

Would you want to multiply two numbers that are closer to one another or further?

Similar Questions

Choose Numbers From Two Arrays in Range 🔒 Hard

Discussion (3)