

Problem 2941: Maximum GCD-Sum of a Subarray

Problem Information

Difficulty: Hard

Acceptance Rate: 37.19%

Paid Only: Yes

Tags: Array, Math, Binary Search, Number Theory

Problem Description

You are given an array of integers `nums` and an integer `k`.

The **gcd-sum** of an array `a` is calculated as follows:

* Let `s` be the sum of all the elements of `a`. * Let `g` be the **greatest common divisor** of all the elements of `a`. * The gcd-sum of `a` is equal to `s * g`.

Return _the**maximum gcd-sum** of a subarray of_ `nums` _with at least_ `k` _elements._

Example 1:

Input: nums = [2,1,4,4,4,2], k = 2 **Output:** 48 **Explanation:** We take the subarray [4,4,4], the gcd-sum of this array is $4 * (4 + 4 + 4) = 48$. It can be shown that we can not select any other subarray with a gcd-sum greater than 48.

Example 2:

Input: nums = [7,3,9,4], k = 1 **Output:** 81 **Explanation:** We take the subarray [9], the gcd-sum of this array is $9 * 9 = 81$. It can be shown that we can not select any other subarray with a gcd-sum greater than 81.

Constraints:

* `n == nums.length` * `1 <= n <= 105` * `1 <= nums[i] <= 106` * `1 <= k <= n`

Code Snippets

C++:

```
class Solution {  
public:  
    long long maxGcdSum(vector<int>& nums, int k) {  
  
    }  
};
```

Java:

```
class Solution {  
public long maxGcdSum(int[] nums, int k) {  
  
}  
}
```

Python3:

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