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COURSE NAME:DECODE DSA WITH C++
BATCH:DECODE 2.0
MODULE NAME:PREFIX SUM
MOBILE NUMBER:8434283953

QUESTION1:

1. Given an array of integers `arr` and two integers `k` and `threshold`, return *the number of sub-arrays of size* `k` *and average greater than or equal to* `threshold`. [Leetcode 1343]

Answer:

```
class Solution {
public:
 int numOfSubarrays(vector<int>& a, int k, int th) {
 int n = a.size();

 int sum = 0;
 int avg = 0;
 int ans = 0;
 for(int i=0;i<k;i++)sum += a[i];
 avg = sum/k;
 if(avg >= th)ans++;
 int i=k;
 while(i < n){
 sum -= a[i-k];
 sum += a[i];
 avg = sum/k;
 if(avg >= th)ans++;
 i++;
 }
```

Question:2

2. The **score** of an array is defined as the **product** of its sum and its length.
   - For example, the score of `[1, 2, 3, 4, 5]` is `(1 + 2 + 3 + 4 + 5) * 5 = 75`.

Answer:

2. The **score** of an array is defined as the **product** of its sum and its length.

- For example, the score of `[1, 2, 3, 4, 5]` is `(1 + 2 + 3 + 4 + 5) * 5 = 75`.

Answer:

```
class Solution {
public:
 long long countSubarrays(vector<int>& a, long long k) {
 long long int i=0,j=0,sum=0,score=0,ans=0;
 long long int n = a.size();
 while(i < n and j < n){
 sum += a[j]; //window expansion
 score = sum*(j-i+1);
 while(i<=j and score >= k){
 //window contraction
 sum -= a[i++];
 score = sum*(j-i+1);
 }
 ans += (j-i+1);
 j++;
 }
 return ans;
 }
};
```

Question:3;

3. Given an array of integers `nums` and an integer `k`. A continuous subarray is called **nice** if there are `k` odd numbers on it. [Leetcode 1248]

Answer:

```
class Solution {
public:
 int numberOfSubarrays(vector<int>& a, int k) {
 int n = a.size();
 int i=0,j=0,cnt=0,ans=0,odd=0;
 while(j<n){
 if(a[j]%2!=0){
 cnt = 0;
 odd++;
 }
 while(i<=j and odd == k){
```

```
 cnt++;
 if(a[i++]%2 != 0)odd--;
 }
 ans += cnt;
 j++;
 }
 return ans;
 }
}
```