Triplets of different numbers P35586_en

Consider an array $A[0..n-1]$. Given two indices ℓ and r of the array, can you count the number of triplets of different numbers in $A[\ell..r]$, that is, the number of (i,j,k) such that $\ell \leq i < j < k \leq r$, $A[i] \neq A[j]$, $A[j] \neq A[k]$, and $A[i] \neq A[k]$? You will have to efficiently answer n such questions.

Input

Input consists of several cases. Each case starts with an n between 5 and 10^5. Follow the n integer numbers $A[0]$, ..., $A[n-1]$ of the array, all between 0 and 10^9. Follow n different queries, each with an ℓ and an r such that $0 \leq \ell$, $\ell + 2 \leq r$, and $r < n$.

Output

For every query of each case, print the required answer in a line (be aware that this answer may be large). Print a line with four dashes at the end of each case.

Observation

The expected solution solves three maximum cases in about two seconds.

Sample input 1

```
5
42 23 100 23 42
0 2
1 3
2 4
0 4
1 4
7
1 2 3 1 2 3 4
0 6
0 5
0 2
3 5
1 5
1 4
0 4
5
4 0 4 0 4
0 4
1 4
2 4
1 3
0 2
```

Sample output 1

```
1
0
1
4
2
----
20
8
1
1
4
2
4
----
0
0
0
0
0
----
```

Problem information

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