Problem H
Sum
Input: Standard Input
Output: Standard Output

You have a sequence of length n. The element of this sequence is seq[i] (i = 1 to n).
Now consider a function

$F(k,a,b) = \sum seq[i]*(i-a+1)^k$ for each i between a to b inclusive.

Given a sequence of length n you have to calculate F(k,a,b).

Input
First line contains T(1≤T≤5) the number of test cases. Then T test cases follow.

The first line of each test case contains an integer n (1≤n≤100000).

The next line contains n integers seq[1] to seq[n]. Each of these integer is in the range from 0 to 1000000000 inclusive.

Next line contains an integer q (q<=10000) the number of queries.

Each of the next q lines contains 3 integers k,a,b. k is between 0 to 20 inclusive. 1≤a≤b≤n.

Output
For each of the query k,a,b output contains 1 integer in each line the value of F(k,a,b)mod 1000000009.

Sample Input

```
2
10
1 2 4 5 1 3 6 7 8 4
5
1 3 7
0 3 7
2 3 7
3 3 7
4 3 7
10
3 6 7 8 4 1 2 4 5 1
5
1 3 7
0 3 7
2 3 7
3 3 7
4 3 7
```

Output for Sample Input

```
59
19
231
1013
4683
49
22
141
493
1965
```

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