Sum It Up

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Task

Minka is very smart kid who recently started learning computer programming.
His coach gave him a cyclic array A having N numbers, and he has to perform Q operations on this array.
In each operation the coach would provide him with a number X. After each operation, every element of the cyclic array would be replaced by the sum of itself and the element lying X positions behind it in the cyclic array. All these replacements take place simultaneously.
For example, if the cyclic array was [a, b, c, d], then after the operation with X = 1, the new array would be [a+d, b+a, c+b, d+c].
He needs to output the sum of the elements of the final array modulus 10^9+7.
He made a program for it but it's not very efficient. You know he is a beginner, so he wants you to make an efficient program for this task because he doesn't want to disappoint his coach.

Input

The first line of each test file contains a integer N (1 <= N <= 100000).
The next line contains N space separated integers which represent the elements of the cyclic array (1 <= Ai <= 10^9).
The third line contains a integer Q (0 <= Q <= 1000000) representing the number of operations that will be applied to the array.
Finally, Q lines follow, each one containing an integer X (0 <= X < N).

Output

Your program should output to the standard output stream the **sum of the elements of the final array modulus 10^9+7.**
Note: There is a newline character at the end of the last line of the output.

Sample Input 1

```
5
1 2 3 4 5
2
1
0
```

Sample Output 1

60

Explanation of Sample Input 1

- After the 1st operation (X = 1), the array would be [1+5, 2+1, 3+2, 4+3, 5+4] = [6, 3, 5, 7, 9]
- After 2nd operation (X = 0), the array would be [6+6, 3+3, 5+5, 7+7, 9+9] = [12, 6, 10, 14, 18]
- Thus the correct answer would equal to = (12+6+10+14+18) % (10^9+7) = 60

Sample Input 2

5
1 2 3 4 5
0

Sample Output 2

15