Subarray

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Given an integer sequence $a_1, a_2, \cdots, a_n$ of length n, we say a continuous subarray $a_l, a_{l+1}, \cdots, a_r$ is good, if the maximum element of the subarray appears exactly k times in the subarray. For each $1 \leq k \leq n$, count the number of good subarrays.

Input

There are multiple test cases. The first line of the input contains an integer T indicating the number of test cases. For each test case:

The first line contains an integer n ($1 \leq n \leq 4 \times 10^5$) indicating the length of the sequence.

The second line contains n integers $a_1, a_2, \cdots, a_n$ ($1 \leq a_i \leq 10^9$) indicating the sequence.

It's guaranteed that the sum of n of all test cases does not exceed 4×10^5.

Output

Let c_i be the number of good subarrays when $k = i$. To decrease the size of output, for each test case, just output one line containing one integer indicating $\sum_{i=1}^{n}(i \times c_i^2)$ modulo 998244353.

Example

standard input	standard output
3 11 1 1 2 1 2 2 3 3 2 3 1 3 2024 5 26 3 1000000000 1000000000 1000000000	2564 36 20

Note

We denote $[l, r]$ as the continuous subarray $a_l, a_{l+1}, \cdots, a_r$. For the first sample test case:

- $c_1 = 27$, $c_2 = 22$ and $c_3 = 17$, while $c_4, c_5, \cdots, c_{11}$ are all 0. So the answer is $(1 \times 27^2 + 2 \times 22^2 + 3 \times 17^2) \bmod 998244353 = 2564$.
- Some examples of good subarrays when $k = 1$ are $[3, 3]$ (maximum element 2 appears once), $[4, 5]$ (maximum element 2 appears once), and $[9, 10]$ (maximum element 3 appears once).
- Some examples of good subarrays when $k = 2$ are $[1, 2]$ (maximum element 1 appears twice), $[4, 6]$ (maximum element 2 appears twice), and $[6, 9]$ (maximum element 3 appears twice).
- Some examples of good subarrays when $k = 3$ are $[3, 6]$ (maximum element 2 appears three times), $[2, 6]$ (maximum element 2 appears three times), and $[1, 11]$ (maximum element 3 appears three times).