Problem F. Find the LCA

Input file:	*standard input*
Output file:	*standard output*
Time limit:	7 seconds
Memory limit:	1024 mebibytes

You are given an integer sequence $A_1, A_2, \ldots, A_N$. You'll make a rooted tree with N vertices numbered from 1 through N. The vertex 1 is the root, and for each vertex i ($2 \le i \le N$), its parent p_i must satisfy $p_i < i$.

You define the score of a rooted tree as follows:

- Let x be the lowest common ancestor of the vertex $N-1$ and the vertex N. Then, the score is

$$\prod_{v \in (\text{subtree rooted at } x)} A_v$$

  Note that we consider x itself is in the subtree rooted at x.

There are $(N-1)!$ ways to make a tree. Find the sum of scores of all possible trees, modulo 998244353.

Input

The first line contains an integer N ($3 \le N \le 250000$).

The second line contains integers $A_1, A_2, \ldots, A_N$ ($1 \le A_i < 998244353$).

Output

Print the answer.

Examples

standard input	standard output
3 2 2 2	12
5 1 2 3 4 5	2080