Problem A. Even Three is Odd

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

The *boboness* of a sequence of integers $(x_1, x_2, \ldots, x_n)$ is $\prod_{i=3}^{n} w(\max\{x_{i-2}, x_{i-1}, x_i\})$. Here, $1 \le x_i \le n$, and the values $w(1), w(2), \ldots, w(n)$ are given.

Bobo would like to know the sum of *boboness* of all sequences satisfying $1 \le x_i \le n$. As this sum can be very large, he is interested only in the answer modulo $(10^9 + 7)$.

Input

The input contains zero or more test cases, and is terminated by end-of-file. For each test case:

The first line contains an integer n $(3 \le n \le 2000)$.

The second line contains n integers $w(1), w(2), \ldots, w(n)$ $(1 \le w(i) \le 10^9)$.

It is guaranteed that the sum of n does not exceed 2000.

Output

For each test case, output an integer which denotes the sum taken modulo $(10^9 + 7)$.

Example

standard input	standard output
3 1 2 3 4 1 1 1 1	72 256