We say an infinite sequence a0,a1,a2,… is **non-increasing** if and only if for all i≥0, ai≥ai+1.
There is an infinite right and down grid. The upper-left cell has coordinates (0,0). Rows are numbered 0 to infinity from top to bottom, columns are numbered from 0 to infinity from left to right.

There is also a **non-increasing** infinite sequence a0,a1,a2,… You are given a0,a1,……,an; for all i>n, ai=0. For every pair of x, y, the cell with coordinates (x, y) (which is located at the intersection of x-th row and y-th column) is white if y<ax and black otherwise.

Initially there is one doll named Tina on (0, 0). You can do the following operation

- Select one doll on (x, y). Remove it and place a doll on (x, y+1) and place a doll on (x+1, y).

Note that multiple dolls can be present at a cell at the same time; in one operation, you remove only one. Your goal is to make all white cells contain 0 dolls. What's the minimum number of operations needed to achieve the goal? Print the answer modulo 10^9+7.

Input

The first line of input contains one integer n ($1 \le n \le 2x10^5$).
The second line of input contains n+1 integers a0,a1,…,an ($0 \le ai \le 2x10^5$).
It is guaranteed that the sequence a is **non-increasing**.

Output

Print the single number which indicates how many possible code variants that do not contradict the m system responses are left.

Examples

Input	2 2 2 0
Output	5