Number of Sequences

A sequence of n integers is *nice* if the following conditions are satisfied:

- $0 \leq a_k \leq k-1$,
- $a_k \equiv a_m \bmod k$ for all pairs k, m such that k divides m.

You're given a sequence, $a_1, \ldots, a_n$, where some numbers may be -1. Find and print the number of *nice* sequences you can create by changing each -1 to a non-negative integer. As this number can be quite large, your answer must be modulo $10^9 + 7$.

Input Format

The first line contains a single integer, n.
The second line contains n space-separated integers describing the respective values of $a_1, \ldots, a_n$.

Constraints

- $1 \leq n \leq 10^5$
- $-1 \leq a_k \leq k-1$
- $n \leq 1000$ for at least 50% of the test cases.

Output Format

Print a single integer denoting the number of *nice* sequences you can get by changing each -1 to a non-negative integer. As this number can be quite large, your answer must be modulo $10^9 + 7$.

Sample Input 0

```
3
0 -1 -1
```

Sample Output 0

```
6
```

Explanation 0

The nice sequences for this input are:

1. $0, 0, 0$
2. $0, 1, 0$
3. $0, 1, 1$
4. $0, 1, 2$
5. $0, 0, 1$
6. $0, 0, 2$

Thus, we print the result of $6 \bmod (10^9 + 7) = 6$ on a new line.

Sample Input 1

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

Sample Output 1

```
1
```