

Multiplication

Task

Given N integers a_1, a_2, \dots, a_N . Calculate their product modulo $10^9 + 7$.

Input

The first line contains one integer N .

Then, N lines follow. The i -th line contains integer a_i .

Output

Output one integer – the product of the given numbers, taken modulo $10^9 + 7$.

Examples

Input	Output	Explanation
2 2 2	4	$2 \cdot 2 = 4$.

Constraints

- $1 \leq N \leq 10^3$
- $1 \leq a_i \leq 10^{18}$ (for all $1 \leq i \leq N$)

Subtasks

No.	Points	Additional constraints
1	35	$N \leq 5$, and all $a_i \leq 10$.
2	64	All $a_i \leq 10^9$.
3	1	No additional constraints.