Solving Problems

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	256 megabytes

Assem was solving problems on a new website that he had recently discovered. He found that the rating system on this website is a little bit strange.

If a participant solved one or more problems for some consecutive days, his rating will increase for each problem he solves on the i_{th} day by i points.

For Example, if a participant solved 2 problems on the first day and 5 problems on the second day, he will get 2 $(2 \cdot 1)$ points on the first day and 10 $(5 \cdot 2)$ points on the second day so his total rating will increase by 12 points.

He decided that he will start solving problems for N consecutive days and he wants to maximize his rating after these N days.

He divided the problems he will solve into N different sheets. Every sheet contains at least one problem. And, he decided that he will solve one sheet every day. Every sheet contains P_i problems.

Before he starts, *Assem* can re-order the sheets in any order he wants. He can only solve one sheet each day and cannot skip any day from the N days without solving any sheet.

Can you tell him the maximum rating that he can obtain if he followed his plan?

Input

The first line of input contains one integer N $(1 \leq N \leq 5 \cdot 10^5)$ — the number of days.

The second line contains N integers P_i $(1 \leq P_i \leq 10^9)$ — the number of problems in the ith sheet.

Output

Print the maximum rating that *Assem* can obtain. As the answer may be very large, print the answer modulo $10^9 + 7$.

Example

standard input	standard output
2 2 5	12

Note

In the given test case, solving the 5-problem sheet on the first day and the 2-problem sheet on the second day will increase the rating by $5 + 4 = 9$ points. While solving the 2-problem sheet on the first day and the 5-problem sheet on the second day will increase the rating by $2 + 10 = 12$ points.

So the second order is better.

A few distributive properties of modulo are as follows:

1. $(a + b)\%c = ((a\%c) + (b\%c))\%c$

2. $(a \times b)\%c = ((a\%c) \times (b\%c))\%c$

3. $(a - b)\%c = ((a\%c) - (b\%c))\%c$