Frumusel

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

Given an number N and a circular array $a = (a_1, a_2, ..., a_N)$ (meaning that a_1 and a_n are neighbours) we define its beauty $f(a)$ as follows:

$$f(a) = \sum_{i=1}^{N} |a_i - a_{i \bmod N+1}|$$

You are given a number N and an array $v = (v_1, v_2, ..., v_N)$ of N distinct positive integers. You must find out the average beauty of all permutations of v modulo $10^9 + 7$.

Input

On the first line an integer N, ($N \le 300000$)

On the second line N integers $v_1, v_2, .., v_N$, ($0 \le v_i \le 10^9, 1 \le i \le N$)

Output

An integer X, which is equal to the desired result modulo $10^9 + 7$.

Examples

standard input	standard output
3 8 6 1	14
4 10 0 1 7	24