Problem G. Restoring a Permutation

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

You are given a positive integer n and two arrays a and b containing n integers each.

You need to find permutation p of length n such that for each $i \in \{1, 2, \dots, n\}$ the following two conditions are satisfied:

- the length of longest increasing subsequence of p ending at position i is equal to a_i,

- the length of longest decreasing subsequence of p starting at position i is equal to b_i.

Input

The first line of input contains a positive integer n $(1 \le n \le 2 \cdot 10^5)$, the length of the permutation.

The second line contains n integers $a_1, a_2 \dots, a_n$, where a_i $(1 \le a_i \le n)$: the length of longest increasing subsequence ending at position i.

The third line contains n integers $b_1, b_2 \dots, b_n$, where b_i $(1 \le b_i \le n)$: the length of longest decreasing subsequence starting at position i.

Output

Print a line containing n space-separated integers $p_1, p_2, \dots, p_n$: the desired permutation.

It is guaranteed that the answer exists. If there are multiple solutions, you may print any one of them.

Examples

standard input	standard output
5 1 1 1 2 3 3 2 1 1 1	3 2 1 4 5
6 1 1 2 2 3 3 2 1 2 1 2 1	2 1 4 3 6 5