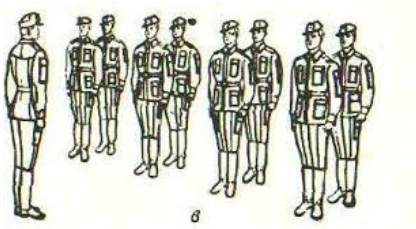
Lines

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Aibar is the commander of the 31-st company. The company soldiers are standing in two lines — the front and the rear lines. In either line, there is the same number of soldiers who are standing in the non-decreasing order of height.



The proper formation is the one in which each soldier standing in the front line is shorter than the soldier standing right behind him in the rear line. To achieve such formation, Aibar came up with a tricky algorithm.

He picks a pair of soldiers on the same position in their according lines, in which the soldier from the front line is higher than his counterpart in the rear line. If there are many such pairs he picks the one closest to the beginning. He orders the two picked soldiers to swap their positions, and then each of the lines is reshuffled back in the non-decreasing order of height. These actions are repeated until the proper formation is achieved.

Aibar wants to know beforehand how many pairs of soldiers will be ordered to swap their positions.

Input

The first line contains a single integer N ($1 \le N \le 10^6$) — the number of soldiers in each line. The next two lines contain the sequences A and B ($1 \le A_i, B_i \le N$) — the heights of the soldiers in the front and the rear lines respectively.

It is guaranteed that initially, soldiers in each line are standing in the non-decreasing order of height.

Output

Output a single integer — the number of swap orders needed to achieve the proper formation.

Scoring

This problem is made up of 5 subtasks, that meet the following constraints:

1. $N \le 1000$. Worth 16 points.
2. $N \le 8000$. Worth 13 points.
3. $A_i, B_i \le 300$, $N \le 3 \times 10^5$. Worth 20 points.
4. $N \le 3 \times 10^5$. Worth 43 points.
5. Only constraints from the statement. Worth 8 points.

Example

standard input	standard output
3 2 2 3 1 1 2	2