Problem K: Key Keeper

When Julia was a child, she just had one key for her savings box. But with greater age comes greater responsibility. Today, she owns n distinct keys: one for her apartment, her mail box, her car, her secret box filled with chocolate bars, and so on. It got to a point where it sometimes becomes a hassle to find the right key whenever she needs to open a lock. Luckily, Julia owns a metallic ring which serves as her key chain. In order to find her keys quicker, she always keeps her n distinct keys in the exact same order on the key chain. Last night, however, Julia's sister Anna was bored and started playing around with Julia's key chain. Unfortunately, the keys were not in the original order when she handed the key chain back to Julia. Annoyed by this childish behaviour, Julia started detaching and reattaching keys from her key chain that seemed to be in a wrong position. Now she wonders what the minimum number of keys is that she needs to detach and reattach from her key chain in order to reestablish the correct order. Note that it does not matter to Julia whether she reestablishes the correct order in clockwise or counterclockwise order as she can always flip around her key chain.

Did you know that . . . ?

. . . shortly before the maiden voyage of the RMS Titanic, the seaman who kept the keys to the storage locker containing the binoculars intended for use by the crow's nest lookout was removed from its command roster? Due to his hasty departure, he accidentally kept the key, and the absence of any binoculars within the crow's nest is believed to be one of the main contributory factors in the Titanic's ultimate demise.

Input

The input consists of:

- One line with an integer n ($1 \leq n \leq 1\,000$), the number of keys on Julia's key chain. All keys are distinct and have a unique label ranging from 1 to n.
- One line with n integers $k_1, \ldots, k_n$ ($1 \leq k_i \leq n$ for all i), the original order of Julia's keys on her key chain that she wants to reestablish. All keys in the original order are distinct, i.e., $k_1, \ldots, k_n$ form a permutation of $[n]$.
- One line with n integers $\ell_1, \ldots, \ell_n$ ($1 \leq \ell_i \leq n$ for all i), the order of Julia's keys on her key chain after Anna has played with them. All keys in the modified order are distinct, i.e., $\ell_1, \ldots, \ell_n$ form a permutation of $[n]$.

Output

Output a single integer z where z is the minimum number of detach/reattach operations necessary to reestablish the correct order.

Sample Input 1	Sample Output 1
3 1 3 2 2 3 1	0

Sample Input 2	Sample Output 2
5 5 3 1 4 2 1 5 3 2 4	1