Problem E – Engraved stones

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Hundreds of years ago, nlogonians carved messages of size N in stones as a method to communicate and preserve their knowledge to future generations. By that time, nlogonians used the numbers from 1 to 100 as their communication method; to minimize the amount of knowledge that is lost while time passes, nlogonians carved each of the messages in two stones, one at the side of the other.

Stones with numbers carved are one of the tourists attractions at the side of Nlogonia river, people passes time walking and comparing the stones, observing that they contain exactly the same message written.

Recently, two stones with numbers carved were found at the sides of the river, however these stones do not have the same numbers which would mean their corresponding stones are missing, however, historians of Nlogonia are aware of stones with hidden messages as they contain core knowledge of Nlogonia and apparently nlogonians wanted these messages to be deciphered only by the smartest people. Research about stones of this kind reveal that the message in these stones was carved on each stone, then random messages were added to the start and end of the message of each stone to make them of the same size (N numbers), a random message can be of size 0. Although the content of the stones differ, the message intended to be communicated is the same, your task is to find the longest message that could have been originally carved in the stones that were found.

Input

The first line of the input contains an integer N ($1 \leq N \leq 10^5$), representing the amount of numbers in the carving of each stone. Each of the next two lines contain N numbers between 1 and 100 separated by a space representing the carvings for each of the two stones found.

Output

Output a single line with an integer indicating the length of the message intended to be communicated by nlogonians.

Sample input 1	**Sample output 1**
5 10 1 15 1 3 15 1 10 3 9	2

Sample input 2	**Sample output 2**
5 10 1 15 1 3 15 1 10 1 15	3