E. Lost Soul

time limit per test: 2 seconds
memory limit per test: 256 megabytes

You are given two integer arrays a and b, each of length n.

You may perform the following operation any number of times:

- Choose an index i $(1 \le i \le n-1)$, and set $a_i := b_{i+1}$, **or** set $b_i := a_{i+1}$.

Before performing any operations, you are allowed to choose an index i $(1 \le i \le n)$ and remove both a_i and b_i from the arrays. This removal can be done **at most once**.

Let the number of matches between two arrays c and d of length m be the number of positions j $(1 \le j \le m)$ such that $c_j = d_j$.

Your task is to compute the maximum number of matches you can achieve.

Input

The first line of the input contains an integer t $(1 \le t \le 10^4)$ — the number of test cases. The description of each test case follows.

The first line contains an integer n $(2 \le n \le 2 \cdot 10^5)$ — the length of a and b.

The second line contains n integers $a_1, a_2, \ldots, a_n$ $(1 \le a_i \le n)$ — the elements of a.

The third line contains n integers $b_1, b_2, \ldots, b_n$ $(1 \le b_i \le n)$ — the elements of b.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, print a single integer — the answer for the test case.

Example

input Copy

```
10
4
1 3 1 4
4 3 2 2
6
2 1 5 3 6 4
3 2 4 5 1 6
2
1 2
2 1
6
2 5 1 3 6 4
3 5 2 3 4 6
4
1 3 2 2
2 1 3 4
8
3 1 4 6 2 2 5 7
4 2 3 7 1 1 6 5
10
5 1 2 7 3 9 4 10 6 8
6 2 3 6 4 10 5 1 7 9
5
3 2 4 1 5
2 4 5 1 3
7
```

Codeforces Round 1029 (Div. 3)
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++23 14.2 (64 bit, ms

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
323842374	Jun/11/2025 06:28	Accepted

→ Problem tags

greedy

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)

```
2 2 6 4 1 3 5
3 1 6 5 1 4 2
5
4 1 3 2 5
3 2 1 5 4
```

output Copy

```
3
3
0
4
3
5
6
4
5
2
```

Note

In the first test case, we can do the following:

- We will choose not to remove any index.
- Choose index 3, and set $a_3 := b_4$. The arrays become: $a = [1, 3, 2, 4]$, $b = [4, 3, 2, 2]$.
- Choose index 1, and set $a_1 := b_2$. The arrays become: $a = [3, 3, 2, 4]$, $b = [4, 3, 2, 2]$.
- Choose index 1, and set $b_1 := a_2$. The arrays become: $a = [3, 3, 2, 4]$, $b = [3, 3, 2, 2]$. Notice that you can perform $a_i := b_{i+1}$ and $b_i := a_{i+1}$ on the same index i.

The number of matches is 3. It can be shown that this is the maximum answer we can achieve.

In the second test case, we can do the following to achieve a maximum of 3:

- Let's choose to remove index 5. The arrays become: $a = [2, 1, 5, 3, 4]$, $b = [3, 2, 4, 5, 6]$.
- Choose index 4, and set $b_4 := a_5$. The arrays become: $a = [2, 1, 5, 3, 4]$, $b = [3, 2, 4, 4, 6]$.
- Choose index 3, and set $a_3 := b_4$. The arrays become: $a = [2, 1, 4, 3, 4]$, $b = [3, 2, 4, 4, 6]$.
- Choose index 2, and set $a_2 := b_3$. The arrays become: $a = [2, 4, 4, 3, 4]$, $b = [3, 2, 4, 4, 6]$.
- Choose index 1, and set $b_1 := a_2$. The arrays become: $a = [2, 4, 4, 3, 4]$, $b = [4, 2, 4, 4, 6]$.
- Choose index 2, and set $b_2 := a_3$. The arrays become: $a = [2, 4, 4, 3, 4]$, $b = [4, 4, 4, 4, 6]$.
- Choose index 1, and set $a_1 := b_2$. The arrays become: $a = [4, 4, 4, 3, 4]$, $b = [4, 4, 4, 4, 6]$.

In the third test case, it can be shown that we can not get any matches. Therefore, the answer is 0.