COCI '07 Contest 5 #4 Avogadro

Luka is slacking again during chemistry class, while the teacher is explaining Avogadro's law.

Luka first drew a table consisting of 3 rows and N columns. Then he wrote the numbers 1 to N into the first row in arbitrary order, each number appearing exactly once. In the other two rows he also wrote integers between 1 and N, but didn't care how many times a number appeared.

Luka can now delete any set of columns from the table. After doing so, he sorts the numbers in each row in ascending order.

He wants to obtain a table in which all three rows are identical after sorting. Write a program that determines the smallest number of columns he must delete.

Input Specification

The first line of input contains the integer N ($1 \leq N \leq 100\,000$), the number of columns in the table. The following three lines contain N integers each, separated by single spaces. The numbers will be between 1 and N, and there will be no duplicates in the first row.

Output Specification

Output the smallest number of columns Luka must delete.

Scoring

In test cases worth 40% of points, N will be less than 100.

In test cases worth 70% of points, N will be less than 10000.

Sample Input 1

```
7
5 4 3 2 1 6 7
5 5 1 1 3 4 7
3 7 1 4 5 6 2
```

Sample Output 1

```
4
```

Sample Input 2

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

Sample Output 2

```
2
```

In the first example, Luka needs to delete the second, fourth, sixth and seventh columns. After deleting the columns and sorting each row, all three rows contain the numbers 1, 3 and 5.