For each input instance, output a single line containing two integers a and b separated by a single space, giving the value range $\langle a,b \rangle$ of the combined generator.

Sample Input

```
5 5 10 10
5 6 6 7
```

Output for Sample Input

```
15 15
0 3
```





Ball Lightning -- Help with the Moving

no files available yet

This time, we need you to help us with moving our offices. Currently, we live in n offices, numbered from 1 to n, and every office is occupied. Our management however decided to change the arrangement, and presented us with plan of who of us should move where. After some negotiation, we have achieved the state in that everyone is supposed to move to exactly one office, and no two people must move to the same office. However, to make the move more efficient, we need to do it in two phases. In the first phase, each day just two persons swap their offices. The second phase is done in just one day, in that everyone moves to some office different from his/hers current one, and additionally all the moves form just one cycle (i.e., they can be described as an ordering k_1, ..., k_n of numbers from 1 to n such that the person in the k_i-th office moves to the k_{i+1}-th office (the person in the k_n-th office moves to the k_1-th office). Your task is to prepare the first phase in such a way that the move can be achieved in the shortest possible time.

Input Specification

The input consists of several instances; input of each instance consists of single line. This line contains an integer n ($1 \leq n \leq 1\,000\,000$), followed by n pairwise distinct integers m_1, ..., m_n ($1 \leq m_i \leq n$). These number mean that the person in the i-th office should move to the m_i-th office.

Output Specification

For each input instance, output a single line containing one integer - the number of days necessary to move all the persons, including the one day for the second phase.

Sample Input

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

Output for Sample Input