ALGERIAN OLYMPIAD IN INFORMATICS

2024 Summer Camp Final Exam

September 19^{th}, 2024

Task 6 - Catch Time
English Version
This task is worth 100 points

Task 6 : Catch Time

In a sprawling park in Algeria, there are three individuals: Redhouane, Raouf, and Rassim. The park is represented as a one-dimensional path with cells numbered from 1 to n, inclusive.

At the start, Redhouane is at cell c, while Raouf is at cell a and Rassim is at cell b. All three are in distinct cells. They all start moving at the same time with the following rules:

- Redhouane can move to an adjacent cell or stay in the current cell. - Raouf and Rassim can also move to an adjacent cell or stay in the current cell.

The goal is to determine how many moves it will take for Raouf and Rassim to catch Redhouane if they all act optimally.

In this scenario: - Redhouane tries to maximize the number of moves it takes for Raouf and Rassim to catch him. - Raouf and Rassim work together to minimize the number of moves needed to catch Redhouane.

Write a Python script that computes the number of moves it will take for Raouf and Rassim to catch Redhouane if they both act optimally, knowing that the program receives n, then a, followed by b, and finally c.

Examples

Input	Output
10 1 4 2	1

Input	Output
8 3 6 1	2

Input	Output
8 3 6 8	2