The Asia West Regional Onsite Competition 2026

The Knight's Dilemma

Difficulty: Hard

Tagline: One Message, Many Leaps: How Invisible Was the Knight?

Problem Statement:

In a grand mediaeval castle, a mischievous knight is secretly delivering messages between two high-ranking officials. The castle is structured as a grid of **n x n** rooms, and the knight uses only his famous **L-shaped moves** (like a chess knight) to travel between rooms, believing it's the most discreet way to navigate the castle's maze-like corridors.

However, the castle's security is on high alert after rumours of unauthorised communication. As the head of the royal security team, you've been tasked with investigating the knight's potential path. You know the exact room where the knight started his secretive journey and the final room where the message was delivered.

Your job is to find the minimum number of rooms the knight could have visited (excluding the start and the end) during his journey between the two locations.

Input Format:

The input will be given in the following format.

- The first line will be the number of rooms in a single row n.

- The second and third lines will contain tuples giving the location of the initial and final houses (a, b).

Constraints:

- 0 n 1010

- 0 <= a <= n

- 0 b n

Output Format:

- Output a single whole number being the minimum number of other rooms passed through

- If the final destination can not be reached in any way from the given starting house, output -1.

Sample Input 0

8

(7,0)

(0,7)

Sample Output 0

5

Sample Input 1:

8

(0,8)

(7,0)

Sample Output 1:

-1