ICODE – QUALIFYING ROUND

OFFICIAL

Duration: 2hrs

Problem 1: Length Discrepancy *(2.5 points)*

Given two strings a and b. Print out the difference in length between the two strings.

Input: The first line is the string a. The second line is the string b.

Output: One line print the number to find.

Note: The input strings may contain spaces (use getline).

Input	Output
icode international school istech jqka1 123456789	22 5

Problem 2: Handshakes at the Party *(3 points)*

At a party with N attendees, each person shakes hands with every other attendee exactly once. How many handshakes occur in total?

Input: A positive integer N $(1 \leq N \leq 10^6)$ representing the number of attendees at the party.

Output: The total number of handshakes.

Input	Output
2 121 1234567	1 7260 762077221461

Problem 3: Military Strategy Game *(3 points)*

In Putan's military strategy game, the enemy's map is a grid of square cells with dimensions $m \times n$. When Putan fires a cannonball into the military map, it destroys the cell:

- If the cannonball hits inside the cell.
- If the cannonball hits on the edge of the cell.

Given the dimensions of the military map, determine the **minimum** number of cannonball shots Putan needs to destroy the entire military map.

Cannon bullet destroy

Input: Two positive integers m *and* n $(1 \leq m, n \leq 10^6)$ representing the dimensions of the military map.

Output: The minimum number of cannonball shots required by Putan.

Input	Output
2 2 5 5	1 9

Problem 4: Special of Zero *(1.5 points)*

In the realm of numbers from 0 to 9, the number 0 holds a special significance. If the zero disappears in this world. What would happen?

Consider a simple example: 101 + 102 = 203. If we remove all the zeros, we get 11 + 12 = 23, and the addition still holds true. However, with the addition of 104 + 33 = 137, removing the zeros results in 14 + 33 = 137, and this calculation is incorrect.

Your task is to determine, given two integers ***a and b***, whether after performing the **addition and removing** all zeros, the result is still correct.

Input: Two lines containing two integers ***a and b*** ***(1 ≤ a, b ≤ 10^9)***

Output: Print **"YES"** if after removing all zeros the addition result is correct, and **"NO"** otherwise.

Input	Output
101 102	YES
104 33	NO

The official test consists of 4 (four) problems./.

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