

Game on Board

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 1024 mebibytes

On the board, there are n different positive integers a_1, \dots, a_n . Three players are making moves in the order 123123123.... In a move, the player chooses two different numbers x and y on the board such that $|x - y|$ is not on the board, and writes $|x - y|$ onto the board (x and y remain on the board as well). The player who can't make a move loses. Can players 2 and 3 cooperate so that player 1 loses?

Input

The first line contains an integer n ($1 \leq n \leq 10^5$), the number of integers on the board.

The second line contains n distinct integers a_1, \dots, a_n ($1 \leq a_i \leq 10^9$): the numbers that are on the board initially.

Output

Print "YES" if players 2 and 3 can cooperate and force player 1 to lose, or "NO" otherwise.

Examples

<i>standard input</i>	<i>standard output</i>
3 1 2 3	YES
3 1 4 3	NO