Cable Car

Mouse Stofl passionately likes riding the cable car. To be able to enjoy the cable car even at home, he bought a small cable car model. The view from a cable car can be enjoyed optimally if the cable car's ride is uniform. This is the case if and only if the slope of the rope is the same at each point of the ride – otherwise, the cable car would start swinging, an event that Stofl would like to avoid. He has measured the heights of his pillars and now needs your help to build his cable car out of them.

All pillars are installed on the floor, which has the same elevation everywhere. The bottom and top stations can be installed at an arbitrary height. After Stofl has installed the the pillars, he will install them suitably, such that the slope remains uniform.

The cable car has already been built by Stofl. There are exactly N pillars, which are installed in distances of 1. Help Stofl to decide if the view can be enjoyed or not.

Input

On the first line there is given the integer N, the number of pillars (always 3) and on the second lines there are N integers, the heights of the pillars.

Output

Print "yes" if the view can be enjoyed optimally. Otherwise print "no".

Constraints

- For the heights of the pillars, we have $1 \leq h_i \leq 10^9$.
- Subtask 1: $N = 3$.
- Subtask 2: $1 \leq N \leq 10^5$.

Example

Input	Output
3 3 5 7	yes

The slope between the first and the second pillar is 2, which is also the case between the second and the third pillar. The slope does not change. Hence the view can be enjoyed.

Input	Output
3 3 5 10	no

The slope between the first to the second pillar is 2 as well, but the slope between the second to the third pillar is 5. As the slope changes, the view cannot be enjoyed optimally.

Input	Output
8 1 2 3 4 5 6 7 9	no