C. Matrix Walk

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

There is a matrix A of size $x \times y$ filled with integers. For every , $A_{i,j} = y(i - 1) + j$. Obviously, every integer from $[1..xy]$ occurs exactly once in this matrix.

You have traversed some path in this matrix. Your path can be described as a sequence of visited cells a_1, a_2, ..., a_n denoting that you started in the cell containing the number a_1, then moved to the cell with the number a_2, and so on.

From the cell located in i-th line and j-th column (we denote this cell as (i, j)) you can move into one of the following cells:

1. $(i + 1, j)$ — only if $i < x$;
2. $(i, j + 1)$ — only if $j < y$;
3. $(i - 1, j)$ — only if $i > 1$;
4. $(i, j - 1)$ — only if $j > 1$.

Notice that making a move requires you to go to an adjacent cell. It is not allowed to stay in the same cell. You don't know x and y exactly, but you have to find any possible values for these numbers such that you could start in the cell containing the integer a_1, then move to the cell containing a_2 (in one step), then move to the cell containing a_3 (also in one step) and so on. Can you choose x and y so that they don't contradict with your sequence of moves?

Input

The first line contains one integer number n ($1 \le n \le 200000$) — the number of cells you visited on your path (if some cell is visited twice, then it's listed twice).

The second line contains n integers a_1, a_2, ..., a_n ($1 \le a_i \le 10^9$) — the integers in the cells on your path.

Output

If all possible values of x and y such that $1 \le x, y \le 10^9$ contradict with the information about your path, print `NO`.

Otherwise, print `YES` in the first line, and in the second line print the values x and y such that your path was possible with such number of lines and columns in the matrix. Remember that they must be positive integers not exceeding 10^9.

Examples

input
8 1 2 3 6 9 8 5 2

output
YES 3 3

input
6 1 2 1 2 5 3

output
NO

input

```
2
1 10
```

output

```
YES
4 9
```

Note

The matrix and the path on it in the first test looks like this:

Also there exist multiple correct answers for both the first and the third examples.