

# Almost Large

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          2 seconds  
Memory limit:       1024 megabytes

You are given a set of non-negative integers of size  $N$ , denoted as  $S = \{S_1, S_2, \dots, S_N\}$ .

There is a variable  $x$ , initially set to  $S_1$ . You can perform the following operation any number of times:

- Choose one element from  $S$  and denote it as  $y$ . Replace  $x$  with  $y$  if the following **condition** is satisfied:
  - **Condition:** Let  $X_j$  and  $Y_j$  be the digits at the  $3^j$  place in the ternary representations of  $x$  and  $y$ , respectively. The number of indices  $j$  such that  $X_j > Y_j$  must be at most 1.

Determine whether it is possible to make  $x = S_N$  after performing some operations.

## Input

The input is given from Standard Input in the following format:

$N$
$S_1 \ S_2 \ \dots \ S_N$

- All values in the input are integers.
- $2 \leq N \leq 2 \times 10^5$
- $0 \leq S_i < 3^{12}$  ( $1 \leq i \leq N$ )
- $S_i \neq S_j$  ( $1 \leq i < j \leq N$ )

## Output

Output **Yes** if it is possible to make  $x = S_N$ , otherwise output **No**.

## Examples

standard input	standard output
2 21 14	Yes
2 12 1	No
5 5 15 45 135 405	Yes

## Note

In the first example, you can transform  $x = 21$  to  $x = 14$  as follows:

- Initially,  $x = 21$ . Choose  $y = 14$  and perform the operation.
  - In ternary representation,  $(X_2, X_1, X_0) = (2, 1, 0)$  for  $x$ , and  $(Y_2, Y_1, Y_0) = (1, 1, 2)$  for  $y$ .
  - There is only one index  $j = 2$  where  $X_j > Y_j$ , so replace  $x$  with 14.