A. Bear and Poker

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Limak is an old brown bear. He often plays poker with his friends. Today they went to a casino. There are n players (including Limak himself) and right now all of them have bids on the table. i-th of them has bid with size a_i dollars.

Each player can double his bid any number of times and triple his bid any number of times. The casino has a great jackpot for making all bids equal. Is it possible that Limak and his friends will win a jackpot?

Input

First line of input contains an integer n ($2 \le n \le 10^5$), the number of players.

The second line contains n integer numbers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the bids of players.

Output

Print "Yes" (without the quotes) if players can make their bids become equal, or "No" otherwise.

Examples

input
4 75 150 75 50
output
Yes

input
3 100 150 250
output
No

Note

In the first sample test first and third players should double their bids twice, second player should double his bid once and fourth player should both double and triple his bid.

It can be shown that in the second sample test there is no way to make all bids equal.

Codeforces Round #318 [RussianCodeCup Thanks-Round] (Div. 1)

Finished

→ **Virtual participation**

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Start virtual contest

→ **Problem tags**

implementation number theory

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial