

Equal

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 512 megabytes

Yuki gives you a sequence of positive integers a_1, \dots, a_n of length n . You can perform the following two operations any number of times:

- Choose positive integers i, j, d such that $1 \leq i < j \leq n$ and $d \mid a_i, d \mid a_j$, then update $a_i \leftarrow \frac{a_i}{d}$ while $a_j \leftarrow \frac{a_j}{d}$;
- Choose positive integers i, j, d such that $1 \leq i < j \leq n$, then update $a_i \leftarrow a_i \cdot d$ while $a_j \leftarrow a_j \cdot d$.

Determine whether it is possible to make $a_1 = a_2 = \dots = a_n$ after several operations.

Input

Each test contains multiple test cases. The first line of input contains a single integer t ($1 \leq t \leq 10^5$) — the number of test cases. The description of the test cases follows.

The first line contains an integer n ($1 \leq n \leq 10^6$), representing the length of the sequence.

The second line contains n integers a_1, \dots, a_n ($1 \leq a_i \leq 5 \cdot 10^6$), describing the given sequence.

It is guaranteed that the sum of n across all test cases does not exceed $2 \cdot 10^6$.

Output

For each test case, print “YES” (without quotes) if it’s possible to make all elements in a equal after several operations, and “NO” (without quotes) otherwise.

You can output the answer in any case (upper or lower). For example, the strings “yEs”, “yes”, “Yes”, and “YES” will be recognized as positive responses.

Example

standard input	standard output
6	YES
1	NO
6	YES
2	NO
2 4	YES
3	YES
1 3 3	
4	
5 3 15 2	
5	
1 3 8 7 6	
6	
13 15 39 169 9 5	

Note

In the first test case, since $n = 1$, all numbers are already the same, so the answer is “YES”.

In the second test case, it can be shown that no matter what operation we perform, a_1 cannot be made equal to a_2 .

In the third test case, you can choose $i = 2$, $j = 3$, $d = 3$ and perform the first operation, transforming the original sequence into $[1, 1, 1]$, where all numbers are the same; thus, the output is “YES”.