Problem I. I

Time limit 1000 ms
Mem limit 262144 kB

Calin has n buckets, the i-th of which contains a_i wooden squares of side length 1.

Can Calin build a square using **all** the given squares?

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of test cases.

The first line of each test case contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the number of buckets.

The second line of each test case contains n integers $a_1, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the number of squares in each bucket.

The sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output "`YES`" if Calin can build a square using **all** of the given 1×1 squares, and "`NO`" otherwise.

You can output the answer in any case (for example, the strings "`yEs`", "`yes`", "`Yes`" and "`YES`" will be recognized as a positive answer).

Examples

Input	Output
5 1 9 2 14 2 7 1 2 3 4 5 6 7 6 1 3 5 7 9 11 4 2 2 2 2	YES YES NO YES NO

Note

In the first test case, Calin can build a 3×3 square.

In the second test case, Calin can build a 4×4 square.

In the third test case, Calin cannot build a square using all the given squares.