Creative Boki-chan

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

One day, Boki-chan, who has trouble sleeping, began to have creative ideas!

The square weighted sum S of an integer sequence of length n defined as $a_1, a_2, \ldots, a_n$ is given by:

$$S = \sum_{i=1}^{n} i^2 \times a_i$$

Boki-chan obtained an integer sequence of length n, $a_1, a_2, \ldots, a_n$. Out of boredom, Boki-chan divided the sequence $\{a\}$ into k contiguous segments $A_i (i = 1, 2, \ldots, k)$ and calculated the square weighted sums of these k segments $S_i (i = 1, 2, \ldots, k)$.

For the square weighted sum S_i of the i-th segment, Boki-chan placed it either to the left or right of the corresponding segment A_i, ensuring that there are no other elements between S_i and A_i. In the end, Boki-chan obtained a sequence of length $n + k$, $b_1, b_2, \ldots, b_{n+k}$.

Due to Boki-chan's long nights leading to memory decline, he only remembers the sequence of length $n + k$, $b_1, b_2, \ldots, b_{n+k}$, but does not recall the original $a_1, a_2, \ldots, a_n$. Additionally, Boki-chan forgot the value of k and how S_i was placed in the sequence.

Please determine whether the original sequence $a_1, a_2, \ldots, a_n$ that satisfies Boki-chan's memory exists.

- **Let there exist a sequence $a_1, a_2, \ldots, a_n$, then $a_l, a_{l+1}, \ldots, a_r (1 \le l \le r \le n)$ is a segment of the sequence $\{a\}$.**
- **If the sequence $\{a\}$ is divided into several contiguous segments $A_1, A_2, \ldots, A_m$, then the first element of A_1 is a_1, the last element of A_m is a_n, and the last element of A_i has an index in $\{a\}$ that is one less than the index of the first element of A_{i+1}. For example, for the sequence $\{1, 6, 9, 7, 2, 3, 8\}$, it can be divided into 3 contiguous segments: $\{1, 6, 9\}$, $\{7, 2\}$, $\{3, 8\}$.**

Input

The input consists of multiple test cases.

First, an integer $T (1 \le T \le 10^4)$ is given, indicating the number of test cases.

For each test case, first input an integer $n (2 \le n \le 10^5)$, representing the length of the sequence $\{b\}$.

Next, input n integers $b_1, b_2, \ldots, b_n (1 \le b_i \le 10^8)$, representing the sequence $\{b\}$.

It is guaranteed that for all data in a test case, the sum of n does not exceed 10^5.

Output

Output a total of T lines.

For each test case, output a string on a new line. If the sequence $\{a\}$ exists, output `Yes`; otherwise, output `No`. The output is case insensitive: for example, `YES` and `yEs` both indicate that the sequence $\{a\}$ exists.

Example

standard input	standard output
2 5 1 2 9 5 5 6 40 1 2 4 1 1	YES NO

Note

In the first test case, the original sequence $\{a\}$ is $\{1, 2, 5\}$, which can be divided into $\{1, 2\}$ and $\{5\}$. The square weighted sum of the first segment is $1^2 \times 1 + 2^2 \times 2 = 9$, and the square weighted sum of the second segment is $1^2 \times 5 = 5$, so placing them according to the problem statement gives the sequence $\{b\}$. In the second test case, it can be proven that there is no $\{a\}$ that satisfies the conditions.