B. Make Equal

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

There are n containers of water lined up, numbered from left to right from 1 to n. Each container can hold any amount of water; initially, the i-th container contains a_i units of water. The sum of a_i is divisible by n.

You can apply the following operation any (possibly zero) number of times: pour any amount of water from the i-th container to the j-th container, where i must be **less** than j (i.e. $i < j$). Any index can be chosen as i or j any number of times.

Determine whether it is possible to make the amount of water in all containers the same using this operation.

Input

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

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

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($0 \le a_i \le 10^9$) — the amounts of water in the containers. It is guaranteed that the sum of a_i in each test case does not exceed $2 \cdot 10^9$. Also, the sum of a_i is divisible by n.

It is guaranteed that the sum of n over all test cases in the input does not exceed $2 \cdot 10^5$.

Output

Output t lines, each of which is the answer to the corresponding test case. As the answer, output "YES" if it is possible to make the amount of water in all containers the same using the described operation. Otherwise, output "NO".

You can output each letter in any case (lowercase or uppercase). For example, the strings "yEs", "yes", "Yes", and "YES" will be accepted as a positive answer.

Example

input Copy

```
6
1
43
2
1 3
5
4 5 2 1 3
3
1 2 3
7
4 5 5 0 6 4 4
7
6 5 5 1 3 4 4
```

output Copy

```
YES
NO
```

```
YES
NO
NO
YES
```

Note

In the third test case of the example ($a = [4, 5, 2, 1, 3]$), you can proceed as follows:

- pour 1 unit of water from the first vessel to the fourth, then $a = [3, 5, 2, 2, 3]$;
- pour 1 unit of water from the second vessel to the third, then $a = [3, 4, 3, 2, 3]$;
- pour 1 unit of water from the second vessel to the fourth, then $a = [3, 3, 3, 3, 3]$.