# Integral Array

| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 2 seconds |
| Memory limit: | 1024 megabytes |

You are given an array $a$ of $n$ positive integers numbered from 1 to $n$. Let's call an array *integral* if for any two, not necessarily different, numbers $x$ and $y$ from this array, $x \geq y$, the number $\left\lfloor \frac{x}{y} \right\rfloor$ ($x$ divided by $y$ with rounding down) is also in this array.

You are guaranteed that all numbers in $a$ do not exceed $c$. Your task is to check whether this array is integral.

## Input

The input consists of multiple test cases. The first line contains a single integer $t$ ($1 \leq t \leq 10\,000$) — the number of test cases. Description of the test cases follows.

The first line of each test case contains two integers $n$ and $c$ ($1 \leq n \leq 10^6$, $1 \leq c \leq 10^7$) — the size of $a$ and the limit for the numbers in the array.

The second line of each test case contains $n$ integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq c$) — the array $a$.

Let $N$ be the sum of $n$ over all test cases and $C$ be the sum of $c$ over all test cases. It is guaranteed that $N \leq 10^6$ and $C \leq 10^7$.

## Output

For each test case print `Yes` if the array is integral and `No` otherwise.

## Example

| standard input | standard output |
|---|---|
| 3<br>3 5<br>1 2 5<br>4 10<br>1 3 3 7<br>1 2<br>2 | Yes<br>No<br>No |

## Note

In the first test case it is easy to see that the array is integral:

- $\left\lfloor \frac{1}{1} \right\rfloor = 1$, $a_1 = 1$, this number occurs in the arry
- $\left\lfloor \frac{2}{2} \right\rfloor = 1$
- $\left\lfloor \frac{5}{5} \right\rfloor = 1$
- $\left\lfloor \frac{2}{1} \right\rfloor = 2$, $a_2 = 2$, this number occurs in the array
- $\left\lfloor \frac{5}{1} \right\rfloor = 5$, $a_3 = 5$, this number occurs in the array
- $\left\lfloor \frac{5}{2} \right\rfloor = 2$, $a_2 = 2$, this number occurs in the array

Thus, the condition is met and the array is integral.

In the second test case it is enough to see that

$\left\lfloor \frac{7}{3} \right\rfloor = \left\lfloor 2\frac{1}{3} \right\rfloor = 2$, this number is not in $a$, that's why it is not integral.

In the third test case $\left\lfloor \frac{2}{2} \right\rfloor = 1$, but there is only 2 in the array, that's why it is not integral.

## Scoring

Tests for this problem are divided into 7 groups. For each of the groups you earn points only if your solution passes all tests in this group and all tests in required groups.

| Group | Points | Additional constraints | | Required groups | Comment |
|---|---|---|---|---|---|
| | | $N$ | $C$ | | |
| 0 | 0 | – | – | – | Sample tests. |
| 1 | 13 | $N \leq 100$ | – | 0 | |
| 2 | 17 | $N \leq 100\,000$ | $C \leq 10\,000$ | 0 | |
| 3 | 15 | $N \leq 1000$ | – | 0, 1 | |
| 4 | 27 | $N \leq 100\,000$ | – | 0 – 3 | |
| 5 | 28 | – | – | 0 – 4 | |