C. Koko And The Transformation

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

koko has two arrays a and b, he wants to know if he can transform a to b in a finite number of steps. In each step he can perform one of two operations:

- Pick two values from **a** and merge them into one value equal to their sum.
- Pick value from **a** and split it into two values such that their sum are equal to the initial value.

koko needs your help, can you find out if he can transform a to b in a finite number of steps?

Input
The first line of input contains two numbers n and m $(1 \leq n, m \leq 10^5)$ – the number of elements in arrays a and b respectively.

The next line contains n integers, the elements in array a $(0 \leq a_i \leq 10^4)$.

The next line contains m integers, the elements in array b $(0 \leq b_i \leq 10^4)$.

Output
Print "Yes" if koko can transform a to b in a finite number of steps, else, print "No".

Example

input Copy

```
3 5
6 15 6
5 12 0 3 7
```

output Copy

```
Yes
```

Note
- One solution to the sample case is: split 15 to 12 and 3, split 6 to 1 and 5, merge 1 and 6 to 7. split 7 to 7 and 0.

- Note that: the order of the numbers in a or b is not important.

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→ **Group Contests**

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- Contest #3.1
- Sheet #3 (Arrays)
- Contest #2
- Sheet #2 (Loops)
- Contest #1
- Sheet #1 (Data type - Conditions)

Sheet #8 (General easy)

Finished

Practice

→ **About Time Scaling**

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.