B. Continued Fractions

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

A continued fraction of height n is a fraction of form . You are given two rational numbers, one is represented as and the other one is represented as a finite fraction of height n. Check if they are equal.

Input

The first line contains two space-separated integers p, q $(1 \leq q \leq p \leq 10^{18})$ — the numerator and the denominator of the first fraction.

The second line contains integer n $(1 \leq n \leq 90)$ — the height of the second fraction. The third line contains n space-separated integers $a_1, a_2, ..., a_n$ $(1 \leq a_i \leq 10^{18})$ — the continued fraction.

Please, do not use the `%lld` specifier to read or write 64-bit integers in C++. It is preferred to use the `cin`, `cout` streams or the `%I64d` specifier.

Output

Print "`YES`" if these fractions are equal and "`NO`" otherwise.

Examples

input

```
9 4
2
2 4
```

output

```
YES
```

input

```
9 4
3
2 3 1
```

output

```
YES
```

input

```
9 4
3
1 2 4
```

output

```
NO
```

Note

In the first sample .

In the second sample .

In the third sample .