

Random Number Generator

Input file: **standard input**
Output file: **standard output**
Time limit: 0.5 seconds
Memory limit: 256 megabytes

Random number generator is an import problem in computer science. *Linear Congruence Method* (LCG) is a classical method for generating pseudo-random numbers. The generator is defined by recurrence relation:

$$X_{n+1} = (aX_n + b) \bmod m$$

where X is the sequence of pseudorandom values, and a, b, m, X_0 are given constants.

Now given the constants a, b, m, X_0 , can you determine if x can be produced by LCG? In other words, can you determine whether $x \in \{X_n\}, n \geq 0$?

Input

A line contains five positive integers a, b, m, X_0 and x , indicating the four given constants and the number to check.

It's guaranteed that $0 \leq a, b, X_0, x < m \leq 10^9$, and m is a prime number.

Output

Output "YES" if x can be produced by LCG with given constants and "NO" otherwise (no quotes).

Examples

standard input	standard output
2 3 13 5 11	YES
3 2 13 5 10	NO

Note

In the first example, the generated random number list is 5, 0, 3, 9, 8, 6, 2, 7, 4, 11, 12, 1, 5, 0, ...

In the second example, the generated random number list is 5, 4, 1, 5, 4, ...

In the third example, the generated random number list is 12, 10, 10, ...