Problem J
AND and/or OR

Suppose you have a non-negative integer x. You can do two types of operations:

1. $x := x \text{ AND } 2x$;
2. $x := x \text{ OR } 2x$;

where AND and OR are the bitwise AND and bitwise OR operations, respectively.

You are given three integers N, A, and B.

If the value of x is initially N, is there any sequence of operations that consists of **exactly** A operations of type 1 and **exactly** B operations of type 2, such that the final value of x is $N \cdot 2^k$ for some non-negative integer k?

Input

Input consists of three integers N, A, and B ($1 \le N \le 10^{18}$, $0 \le A, B \le 10^{18}$, $A + B \ge 1$).

Output

Output a single line containing `YES` if it is possible to make the final value of x equal to $N \cdot 2^k$ where k is a non-negative integer, or `NO` otherwise.

Sample Input 1	Sample Output 1
14 2 2	YES

Explanation of Sample 1: Initially, $x = 14$. You can do the following sequence of operations:

1. Do a type 1 operation. $x = 14 \text{ AND } 28 = 12$.
2. Do a type 1 operation. $x = 12 \text{ AND } 24 = 8$.
3. Do a type 2 operation. $x = 8 \text{ OR } 16 = 24$.
4. Do a type 2 operation. $x = 24 \text{ OR } 48 = 56$.

The final value of x is $56 = 14 \cdot 2^2$.

Sample Input 2	Sample Output 2
1 0 9	NO

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