
Wonderful Number

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 64 megabytes

Given a number N . Determine whether N is **wonderful** or **not**.

Note:

- A number is **wonderful** if this number is **odd** and its **binary representation** is **palindrome**.
- Solve this problem using two functions.

Input

Only one line contains a number N ($0 \leq N \leq 10^9$).

Output

Print "YES" if the number is wonderful otherwise, print "NO".

Examples

standard input	standard output
3	YES
4	NO

Note

For more information visit Palindrome Number: https://en.wikipedia.org/wiki/Palindromic_number