

A. Magic Numbers

time limit per test

2 seconds

memory limit per test

256 megabytes

input

standard input

output

standard output

A magic number is a number formed by concatenation of numbers 1, 14 and 144. We can use each of these numbers any number of times. Therefore 14144, 141414 and 1411 are magic numbers but 1444, 514 and 414 are not.

You're given a number. Determine if it is a magic number or not.

Input

The first line of input contains an integer n , ($1 \leq n \leq 10^9$). This number doesn't contain leading zeros.

Output

Print "YES" if n is a magic number or print "NO" if it's not.

Examples

Input

114114

Output

YES

Input

1111

Output

YES

Input

441231

Output

NO