I. Truncatable primes

A truncatable prime is a prime number which contains no zeros in decimal notation and all its suffixes are primes. 1 is considered to be not a prime.

You are given a positive integer n. Figure out whether it is a truncatable prime.

Input

The only line of input contains an integer n ($2 \leq n \leq 10^7$).

Output

Output "YES" if n is a truncatable prime. Output "NO" otherwise. Quotes for clarity only.

Examples

input
19
output
NO

input
9137
output
YES

Note

In the first sample 19 is a prime but its suffix 9 is not.

In the second sample 9137, 137, 37 and 7 are all primes, so 9137 is a truncatable prime.