Problem N. div4-4

Time limit 3000 ms
Mem limit 262144 kB

Let's call a number a *binary decimal* if it is a positive integer and all digits in its decimal notation are either 0 or 1. For example, 1 010 111 is a binary decimal, while 10 201 and 787 788 are not.

Given a number n, you are asked whether or not it is possible to represent n as a product of some (not necessarily distinct) binary decimals.

Input

The first line contains a single integer t ($1 \le t \le 5 \cdot 10^4$) — the number of test cases.

The only line of each test case contains a single integer n ($1 \le n \le 10^5$).

Output

For each test case, output "`YES`" (without quotes) if n can be represented as a product of binary decimals, and "`NO`" (without quotes) otherwise.

You can output "`YES`" and "`NO`" in any case (for example, strings "`yES`", "`yes`", and "`Yes`" will be recognized as a positive response).

Examples

Input	Output
11 121 1 14641 12221 10110 100000 99 112 2024 12421 1001	YES YES YES YES YES YES NO NO NO NO YES

Note

The first five test cases can be represented as a product of binary decimals as follows:

- $121 = 11 \times 11$.
- $1 = 1$ is already a binary decimal.
- $14\,641 = 11 \times 11 \times 11 \times 11$.
- $12\,221 = 11 \times 11 \times 101$.
- $10\,110 = 10\,110$ is already a binary decimal.