D. Product of Binary Decimals

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

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).

Example

input

```
11
121
1
14641
12221
10110
100000
99
112
2024
12421
1001
```

output

```
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.