

## 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  $t$  ( $1 \leq t \leq 5 \cdot 10^4$ ) — the number of test cases.

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

### 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	Copy
11	
121	
1	
14641	
12221	
10110	
100000	
99	
112	
2024	
12421	
1001	
output	Copy
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.

Codeforces Round 937 (Div. 4)

Finished

→ Practice?

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Register for practice

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→ Problem tags

brute force

dp

implementation

number theory

No tag edit access

→ Contest materials

Announcement (en)

Tutorial (en)

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