B. T-primes

time limit per test
2 seconds
memory limit per test
256 megabytes
input
standard input
output
standard output

We know that prime numbers are positive integers that have exactly two distinct positive divisors. Similarly, we'll call a positive integer t *T-prime*, if t has exactly three distinct positive divisors.

You are given an array of n positive integers. For each of them determine whether it is T-prime or not.

Input

The first line contains a single positive integer, n ($1 \le n \le 10^5$), showing how many numbers are in the array. The next line contains n space-separated integers x_i ($1 \le x_i \le 10^{12}$).

Please, do not use the `%lld` specifier to read or write 64-bit integers in C++. It is advised to use the `cin`, `cout` streams or the `%I64d` specifier.

Output

Print n lines: the i-th line should contain "YES" (without the quotes), if number x_i is T-prime, and "`NO`" (without the quotes), if it isn't.

Examples

input

Copy

```
3
4 5 6
```

output

```
YES
NO
NO
```

Note

The given test has three numbers. The first number 4 has exactly three divisors — 1, 2 and 4, thus the answer for this number is "YES". The second number 5 has two divisors (1 and 5), and the third number 6 has four divisors (1, 2, 3, 6), hence the answer for them is "`NO`".