

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

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

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".

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Round #142 (Div. 2)

Finished

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