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
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".