

Prime or Not

Given the number, you are to answer the question: "Is it prime?"

Solutions to this problem can be submitted in C, C++, Pascal, Perl, Python, Ruby, Lisp, Hask, Ocaml, Prolog, Whitespace, Brainfk and Intercal only.**

Input

t – the number of test cases, then t test cases follows. [$t \leq 500$]

Each line contains one integer: N [$2 \leq N \leq 2^{63}-1$]

Output

For each test case output string "YES" if given number is prime and "NO" otherwise.

Example

Input:

5
2
3
4
5
6

Output:

YES
YES
NO
YES
NO