

Prime or not Prime!

In this problem, your task is to determine if a given number is a prime number or a composite number.

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows. Each test case consists of a single line containing a single integer « n » ($2 \leq n \leq 10^9$).

Output

For each test case, your program should output a single line containing « YES » (without quotes and spaces) if the given integer is prime or « NO » (without quotes and spaces) if the given integer is a composite number.

Example

Input:

```
6
16
127
256
513
2048
5097
```

Output:

```
NO
YES
NO
NO
NO
NO
```