

# Strong Imperfect Numbers

Problem Code: **IMPERNUM**


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Trozan Number is a number that is strong but not a perfect power. A number  $n$  is known as a strong number if, for every prime divisor or factor  $p$  of  $n$ ,  $p^2$  is also a divisor. In other words, every prime factor appears at least squared.

All Trozan numbers are strong. However, not all strong numbers are Trozan numbers: only those that cannot be represented as  $m^k$ , where  $m$  and  $k$  are positive integers greater than 1.

For a given a  $N$  you have to output whether it is a trozan number or not.

## Input

First line of input contains a single integer  $T$  ( $1 \leq T \leq 5000$ ), the number of test cases.

Each test case contains a line containing the number  $N$  ( $2 \leq N \leq 1000000000$ ).

## Output

for each testcase output YES if it is a Trozan Number or NO otherwise.

## Solution Templates

In the solution templates provided, complete the function whose signature is

```
C / C++
bool isTrojan(int N)

JAVA
static boolean isTrojan(int N)
```

The function should return true, if the number is a Trojan Number. It should return false, otherwise.

Note: You are allowed to edit the code as you please. Add / delete headers. Add / delete methods. And so on.. So long as your final code solves the problem with Input and Output as described above. You may submit your own code, without using the template at all.

## Example

Input :

```
3
2
8
108
```

Output :

```
NO
NO
YES
```

## Example (if you use the Solution Template)

```
isTrojan(2) should return false
isTrojan(8) should return false
isTrojan(108) should return true
```

**All Submissions**  
[\(/DI17R019/status/IMPERNUM\)](#)

**Successful Submissions**



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