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## Day 25: Running Time and Complexity!

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Problem

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Welcome to Day 25! Check out a video review of [running time](#), or just jump right into the problem.

In this challenge, you will determine if a given number  $X$  is prime or not. A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. You will be given  $N$  numbers and for each, you will print out "Prime" if the number is prime or "Not prime" if the number is not prime.

If this is too easy, create a method that decides if  $X$  is prime or not in  $O(\sqrt{X})$  time. Think modulus and square root! If you are having trouble, try creating an  $O(X)$  time algorithm and see whether it solves the problem or not.

To review Big-O Notation, remember...

- Big-O "is used in Computer Science to describe the performance or complexity of an algorithm."
- Big-O "specifically describes the worst-case scenario, and can be used to describe the execution time required or the space used (e.g. in memory or on disk) by an algorithm."
- Read more [here](#)

Good luck!

### Input Format

The first line of the input is  $T$ , total number of test cases. Each of the next line contains an integer  $N$ .

### Constraints

- 
- 

### Output Format

For each test case print *Prime* if  $N$  is prime, otherwise print *Not prime*.

### Sample Input

```
3
12
5
7
```

### Sample Output

```
Not prime
Prime
Prime
```


### Explanation

There are three testcases 12, 5, and 7. 12 is not prime, 5 is prime, and 7 is prime.

Submissions: 3639

Max Score: 100

Difficulty: Moderate

[More](#)Current Buffer (saved locally, editable)  C++ 

```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

 [Upload Code as File](#)

Test against custom input

Run Code

Submit Code

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