K. Prime Fibonacci

time limit per test: 0.25 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

This problem is merging between prime and Fibonacci problems, but believe me, you will like it :)

Given a number N. your task is to calculate the value of the n_{th} number in the Fibonacci sequence and check whether this number is prime or not.

You may have forgotten how to build a Fibonacci sequence so in order to build it use the following function:

- $F_1 = 0$
- $F_2 = 1$
- $F_n = F_{n-1} + F_{n-2}$

Note: you have to answer several test cases, so you have to write efficient code.

Input

The first line contains a number $T(1 \leq T \leq 10^5)$ the number of test cases. Each test case contains a single number $N(1 \leq N \leq 50)$ representing the index of the Fibonacci number you are asked about.

Output

Print **"prime"** (without quotes) if F_n is prime, otherwise print **"not prime"** (without quotes).

Example

input	Copy
3 1 5 7	

output	Copy
not prime prime not prime	

Note

In the first test case, the 1_{th} number in the Fibonacci sequence is 0 and it is not prime so the answer is "not prime"

In the second test case, the 5_{th} number in the Fibonacci sequence is 3 and it is prime so the answer is "prime"

In the third test case, the 7_{th} number in the Fibonacci sequence is 8 and it is not prime so the answer is "not prime"

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Sheet #8 (General easy)
Finished
Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.