Prime Or Not

Determine whether the given number is prime or not. A prime number is only divisible by 1 and the number itself.
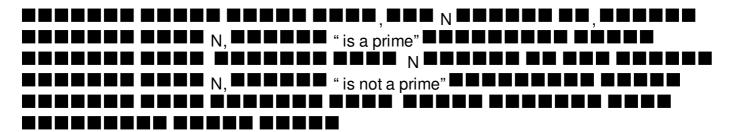
████ ██████ ██████ ████ ███ ████ ███ ██████
██████ █████████ █ ███ ██████ ██████ ██████

Input

First line contains the number of test cases T (T ≤ 10), then T lines follow, each contains an integer N (2 ≤ N ≤ 1000000000000).

█████ ██████ █████ █████ █████ █████ █████ █
██████ T (T≤10), █████ T ██████ ████ █████ █████
█████████ ████ ███ █████ ██████ N(2 ≤ N ≤ 1000000000000)
█████

Output

For each test case, if N is a prime, first print N, then print the string " is a prime", otherwise, first print N, then print " is not a prime" without the quotes. See sample input output for more details.

██████ █████ █████ ████, ███ N ██████ ██, ██████
██████ ████ N, ██████ " is a prime" █████████ █████
██████ ████ ██████ ████ N ██████ ██ ███ ██████
██████ ████ N, ██████ " is not a prime" █████████ █████
█████ ████ ██████ ████ █████ ██████ ████
████████ █████ █████

Example

Input:

3
2
6
11

Output:

2 is a prime
6 is not a prime
11 is a prime