

# Is Prime

The goal of this exercise is to create a program which reads positive integers from `std::cin` and outputs for each of them whether it is prime or not.

The following restrictions/assumptions apply: - The memory footprint of your program may not depend on the input (space complexity  $O(1)$ ) - No spurious data will be present in the input set - The input file contains only a single line, holding all values

The output generated for each input must have the following form:

*input* is a prime: [True, False]

So for the input

```
1 10 13
```

The output must be

```
1 is a prime: True
10 is a prime: False
13 is a prime: True
```

Full call example given that the executable is called `main`

```
echo "1 10 13" | ./main
```

Expected output as before.

## Challenge

Implementations faster than our (suboptimal but not bad) reference implementation get extra points.

## Bonus

Another bonus is given to an implementation if it is at least 10% faster than any of the other implementations (including our reference implem)