



# IL2234 - Digital Design with HDL

Lecture 1 - Introduction

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# There Is No Largest Prime Number

The proof uses *reductio ad absurdum*.

## Theorem

There is no largest prime number.

## Proof.

1. Suppose  $p$  were the largest prime number.
2. Consider the number  $q = p + 1$ .
3. But  $q$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.
4. But  $q + 1$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.



# There Is No Largest Prime Number

The proof uses *reductio ad absurdum*.

## Theorem

There is no largest prime number.

## Proof.

1. Suppose  $p$  were the largest prime number.
2. Let  $q$  be the product of the first  $p$  numbers.
3.  $q + 1$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.
4. But  $q + 1$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.



# There Is No Largest Prime Number

The proof uses *reductio ad absurdum*.

## Theorem

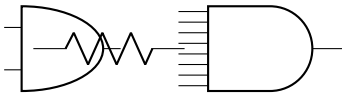
There is no largest prime number.

## Proof.

1. Suppose  $p$  were the largest prime number.
2. Let  $q$  be the product of the first  $p$  numbers.
3. Then  $q + 1$  is not divisible by any of them.
4. But  $q + 1$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.



# There tete



# CMOS equivalent circuit

