# ctheorems

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https://github.com/sahasatvik/typst-theorems

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## 1. Introduction

This document only includes the examples given in the manual; each one of these has been explained in full detail there.

## 2. Feature demonstration

**Theorem 2.1** (Euclid): There are infinitely many primes.

**Lemma 2.2**: If *n* divides both *x* and *y*, it also divides x - y.

**Corollary 2.2.1**: If n divides two consecutive natural numbers, then n = 1.

### 2.1. Suppressing numbering

Example: The numbers 2, 3, and 17 are prime.

**Lemma**: The square of any even number is divisible by 4.

**Lemma 2.1.1**: The square of any odd number is one more than a multiple of 4.

Lemma 42: The square of any natural number cannot be two more than a multiple of 4.

#### 2.2. Limiting depth

**Definition 2.1** (Prime numbers): A natural number is called a *prime number* if it is greater than 1 and cannot be written as the product of two smaller natural numbers.

**Definition 2.2** (Composite numbers): A natural number is called a *composite number* if it is greater than 1 and not prime.

Example 2.2.0.0.1: The numbers 4, 6, and 42 are composite.

#### 2.3. Custom formatting

Lemma 2.3.1: All even natural numbers greater than 2 are composite.

PROOF: Every even natural number n can be written as the product of the natural numbers 2 and n/2. When n > 2, both of these are smaller than 2 itself.

**Notation** (I): The variable p is reserved for prime numbers.

**Notation** (II) for Reals: The variable x is reserved for real numbers.

Lem. 2.3.2: All multiples of 3 greater than 3 are composite.

#### 2.4. Labels and references

Recall that there are infinitely many prime numbers via Theorem 2.1.

You can reference future environments too, like Cor. 2.4.1.1.

**Lemma 2.4.1**: All primes apart from 2 and 3 are of the form  $6k \pm 1$ .

You can modify the supplement and numbering to be used in references, like Lem. (2.4.1).

#### 2.5. Overriding base

*Remark 2.5.1*: There are infinitely many composite numbers.

Corollary 2.4.1.1: All primes greater than 2 are odd.

Remark 2.4.1.1.1: Two is a lone prime.