ctheorems

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

Contents

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*.