1 Numbered theorems, definitions, corollaries and lemmas

Theorems can easily be defined:

Theorem 1.1. *Let f be a function whose derivative exists in every point, then f is a continuous function.*

Theorem 1.2 (Pythagorean theorem)**.** *This is a theorem about right triangles and can be summarised in the next equation*

$$x^2 + y^2 = z^2$$

And a consequence of theorem **??** is the statement in the next corollary.

Corollary 1.2.1. *There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.*

You can reference theorems such as **??** when a label is assigned.

Lemma 1.3. *Given two line segments whose lengths are a and b respectively there is a real number r such that $b = ra$.*

Definition 1.1 (Absolute value function)**.** The absolute value function can be specified as a two-part definition as follows:

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$