

Elegant Style

◊ THEOREM 1 ◊

(Pythagorean)

In a right triangle with legs a and b and hypotenuse c :

$$a^2 + b^2 = c^2$$

• DEFINITION 1 •

A **continuous function** is one where small changes in input produce small changes in output.

• LEMMA 1 •

If f is continuous at a , then f is bounded in some neighborhood of a .

Remark. This result generalizes to higher dimensions.

★ EXAMPLE 1 ★

Consider $f(x) = x^2$. Then $f(2) = 4$.

PROOF. By direct calculation and the definition of continuity. ■