Theorem 1. *In a right-angled triangle, the square of the hypotenuse side is equal to the sum of squares of the other two sides.*

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

Definition 1 (Absolute value function)**.** *The absolute value function can be specified as a two-part definition as follows:*

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

Corollary 1. *Any right triangle, the hypotenuse is greater than any one of the legs, but less than the sum of them*

Lemma 1. *Given two line segments whose lengths are a and b respectively there is a real number r such that b=ra.*