Suppose $a, b \in \mathbb{R}$. Then $a^2 + b^2 \neq (a + b)^2$ if and only if $a \neq 0$ and $b \neq 0$.

Proof. Observe that $(a+b)^2 = a^2 + 2ab + b^2$. If $a \neq 0$ and $b \neq 0$, $2ab \neq 0$, so $a^2 + 2ab + b^2 \neq a^2 + b^2$. Conversely, if $a = 0$ or $b = 0$, $2ab = 0$, so $a^2 + 2ab + b^2 = a^2 + b^2$. $\square$