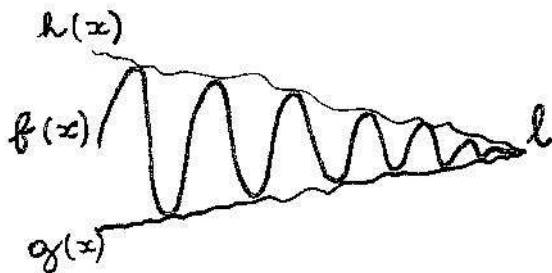


TEOREMA DEL CONFRONTO (o teorema dei carabinieri)

siano $f(x)$, $g(x)$, $h(x)$ definite in A

$$h(x) \leq f(x) \leq g(x) \text{ in } U(x_0)$$

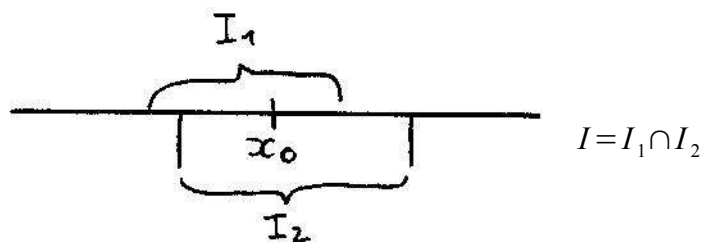
$$\lim_{x \rightarrow x_0} h(x) = \lim_{x \rightarrow x_0} g(x) = l \quad \Rightarrow \quad \lim_{x \rightarrow x_0} f(x) = l$$



DIMOSTRAZIONE:

$$\lim_{x \rightarrow x_0} h(x) = l \quad \forall \epsilon > 0 \quad \exists I_1(x_0): \quad \forall x \in I_1, x \neq x_0 \quad l - \epsilon < h(x) < l + \epsilon$$

$$\lim_{x \rightarrow x_0} g(x) = l \quad \forall \epsilon > 0 \quad \exists I_2(x_0): \quad \forall x \in I_2, x \neq x_0 \quad l - \epsilon < g(x) < l + \epsilon$$



$$l - \epsilon < h(x) \leq f(x) \leq g(x) < l + \epsilon \quad \Rightarrow \quad \lim_{x \rightarrow x_0} f(x) = l$$