Supponiamo $l_1 = \lim_{n \to +\infty} a_n$, $l_2 = \lim_{n \to +\infty} a_n$

Inoltre consideriamo $\varepsilon \in \left(0, \frac{l_2 - l_1}{2}\right)$

Allora

$$\exists n_1 \in \mathbb{N}, \forall m \in \mathbb{N} \quad m > n_1 : |a_m - l_1| < \varepsilon$$
$$\exists n_2 \in \mathbb{N}, \forall m \in \mathbb{N} \quad m > n_2 : |a_m - l_2| < \varepsilon$$

$\Rightarrow \bar{n} := \max(n_1, n_2)$ si ha

$$\left.\begin{array}{l} \forall m \in \mathbb{N}, m > \bar{n} \quad |a_m - l_1| < \varepsilon \\ \forall m \in \mathbb{N}, m > \bar{n} \quad |a_m - l_2| < \varepsilon \end{array}\right\} \text{ASSURDO}$$

PERCHÉ $l_1 + \varepsilon < l_2 + \varepsilon$