Definizione 1 (Teorema dei 2 carabinieri)**:**
Se $\underbrace{\{a_n\}\ , \{b_n\}}_{convergono\ a\ \ l}\ \ , \{c_n\}$

$$\grave{e}\ ovvio\ che\!:\ a_n \leq c_n \leq b_n \implies c_n converge\ a\ l \tag{1}$$

DIMOSTRAZIONE 1.

$$\forall \epsilon > 0, \exists \overline{n_1}, \overline{n_2} \in \mathbb{N} : \tag{2}$$

$$\Downarrow$$

$$l - \epsilon < a_n < l + \epsilon \qquad \& \qquad l - \epsilon < b_n < l + \epsilon \tag{3}$$

se $n > \max\{\overline{n_1}, \overline{n_2}\}$

$$\Downarrow$$

$$l - \epsilon < a_n \leq c_n \leq b_n < l + \epsilon \qquad \forall n > \overline{n} \tag{4}$$

$$\underbrace{l - \epsilon < c_n < l + \epsilon}_{|c_n - l| < \epsilon} \implies \lim_{n \to +\infty} c_n = l \tag{5}$$