Cauchy Sequences

When can we guarantee that a seq conv?

Def: a seq of reals $\{x_n\}$ is said to be a **Cauchy seq** iff $\forall \varepsilon > 0 \; \exists N_\varepsilon$ such that for every $n, m \geq N_\varepsilon$

$$|x_n - x_m| < \varepsilon$$

Prop Spse $x_n \to x$ Then $\{x_n\}$ is a Cauchy seq.