Let $a, b$ be real numbers satisfying $a \leq b$. Construct a sequence $s_n$ such that

(a) $s_n \notin [a, b]$ for each $n = 1, 2, 3, \ldots$,

(b) $\lim \inf_{n \to \infty} s_n = a$, and

(c) $\lim \sup_{n \to \infty} s_n = b$. 