Exercise 4. (Q1.4): The sequence (b_n) is a Cauchy sequence.

A sequence (b_n) is a Cauchy sequence if given any $\epsilon \in \mathbb{R} > 0$, there exists an $N \in \mathbb{N}$, such that whenever $n, m \in \mathbb{N} > N$,

$$|b_n - b_m| < \epsilon.$$