1. Prove that if \( \{a_n\} \to L \) and \( \{c_n\} \to L \) and if \( \{b_n\} \) is a sequence such that \( a_n \leq b_n \leq c_n \) for all \( n \), then \( \{b_n\} \to L \). [50 pts]

2. Prove that if \( \{a_n\} \) is a sequence with the property that \( a_n \geq 0 \) for all \( n \) and \( \{a_n\} \to L \) that \( L \geq 0 \). [50 pts]