Math 501: Intro to Real Analysis
Homework 6

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Problem

Let $a_1, a_2, a_3, ...$ and $b_1, b_2, b_3, ...$ be bounded sequences of real numbers. Show that

$$\overline{\lim}(a_n + b_n) \leq \overline{\lim}(a_n) + \overline{\lim}(b_n) \tag{1}$$

with equality holding if one of the original sequences converges.

Solution