

Problem 2: Limit of a Sequence

Let a_n be the sequence of real numbers given by $a_1 = 1$ and $a_{n+1} = \sqrt{a_1 + a_2 + \cdots + a_n}$ for all $n \geq 1$. Determine $\lim_{n \rightarrow \infty} a_n$.

As always, show your work, fully explain and justify your answer. A solution mainly obtained by computers or calculators will not be accepted.

Posting Date 1/21/2024. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 by e-mail or hard-copy by noon on Friday, February 2, 2024. An email submission must be a single pdf file. Hard copy submissions must be dropped in the file holder at my office door (Hayes 319) and must include a time stamp.