F. Gatta and A. D'Amico, Sequences $\{H_n\}$ for which H_{n+1}/H_n approaches the Golden Ratio, Fibonacci Quart. **46/47** (2008/2009), no. 4, 346–349.

Abstract

The Golden Ratio Φ can be obtained as the limit n goes to $+\infty$ of the ratio H_{n+1}/H_n for an infinite number of sequences $\{H_n\}$.