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Abstract

Let ϕ denote the golden ratio $(\sqrt{5}+1)/2$ and x be a positive rational number. We study how the ϕ-expansion of x can be found using some known results on Fibonacci numbers. We characterize those numbers in $(0,1)$ with finite ϕ-expansions. If $x \in \mathbb{Q} \cap (0,1)$, we give a precise expression for its ϕ-expansion. In this case, the computation involves only simple operations on integers.