Abstract

The function $R(n)$ that counts the number of representations of the integer $n$ as the sum of distinct Fibonacci numbers has been studied for over 40 years, and many fascinating properties have been discovered. In this paper we prove that $R(n) \leq \sqrt{n} + 1$ for all $n \geq 0$, with equality if and only if $n = F_m^2 - 1$ for some integer $m \geq 2$. 