Abstract

In this paper, we present explicit formulas for the sum of the first $n$ Tetranacci numbers and for the sum of the squares of the first $n$ Tetranacci numbers. In the second half of the paper, we will prove an explicit formula for the sum of the first $n$ Fibonacci $m$-step numbers. This formula will give us explicit expressions for the sum of the first $n$ Pentanacci numbers, the first $n$ Hexanacci numbers, the first $n$ Heptanacci numbers, and so on.