Year: 2017 | **Vol.: 91** | **Fasc.: 3-4**

Title: On the Diophantine equations $(x-1)^3+x^5+(x+1)^3=y^n$ and $(x-1)^5+x^3+(x+1)^5=y^n$

Author(s): Zhongfeng Zhang

In this paper, we prove that the Diophantine equations $(x-1)^3+x^5+(x+1)^3=y^n$ and $(x-1)^5+x^3+(x+1)^5=y^n$ have no integer solutions with $x\neq 0$ and $n>1$, unless $(x,y,n)=(1,\pm 3,2)$ for the first equation.

Address:
Zhongfeng Zhang
School of Mathematics and Statistics
Zhaoqing University
Zhaoqing 526061
P. R. China