

The Diophantine equation
 $(x + 1)^k + (x + 2)^k + \cdots + (\ell x)^k = y^n$ revisited

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Abstract. Let $k, \ell \geq 2$ be fixed integers, and C be an effectively computable constant depending only on k and ℓ . In this paper, we prove that all solutions of the equation $(x + 1)^k + (x + 2)^k + \cdots + (\ell x)^k = y^n$ in integers x, y, n with $x, y \geq 1$, $n \geq 2$, $k \neq 3$ and $\ell \equiv 1 \pmod{2}$ satisfy $\max\{x, y, n\} < C$. The case when ℓ is even has already been completed by the second author (see [24]).

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