

Year: 2013	Vol.: 83	Fasc.: 1-2
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Title: Balancing numbers which are products of consecutive integers

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In 1999 A. BEHERA and G. K. PANDA defined balancing numbers as follows. A positive integer n is called a balancing number if $1 + 2 + \cdots + (n - 1) = (n + 1) + (n + 2) + \cdots + (n + k)$ for some $k \in \mathbb{N}$. The sequence of balancing numbers is denoted by B_m for $m \in \mathbb{N}$. In this paper we show that the Diophantine equation $B_m = x(x + 1)(x + 2)(x + 3)(x + 4)$ has no solution with $m \geq 0$ and $x \in \mathbb{Z}$. We follow the ideas described, that is we combine Baker's method and the so-called Mordell–Weil sieve to obtain all solutions.

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