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Title: On (a, b)-balancing numbers

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A positive integer n is called a balancing number if $1 + \ldots + (n-1) = (n+1) + \cdots + (n+r)$ for some positive integer r. Balancing numbers and their generalizations have been investigated by several authors, from many aspects. In this paper we introduce the concept of balancing numbers in arithmetic progressions, and prove several effective finiteness and explicit results about them. In the proofs of our results, among others, we combine Baker's method, the modular method developed by Wiles and others, a result of Bennett about the diophantine equation $|ax^n - by^n| = 1$, the Chabauty method and the theory of elliptic curves.

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