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A GENERALIZATION OF BEATTY'S THEOREM

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Abstract. In 1926 Sam Beatty made the following discovery, which he posed as a problem in [1]. If a is a positive irrational number, the sequences $m(1+a), m = 1, 2, \dots$ and $n(1+a^{-1}), n = 1, 2, \dots$ together contain exactly one number from each of the intervals $(k, k+1), k = 1, 2, 3, \dots$. The problem was solved by Ostrowski and Aitken[4] and generalized to a larger class of sequences by Lambeck and Moser[3]. The authors are grateful for UNC Charlotte undergraduate James Rudzinski for suggesting the combinatorial game that lead to this paper.

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