



A new proof of Sarkozy's theorem

Neil Lyall

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It is a striking and elegant fact (proved independently by Furstenberg and Sarkozy) that in any subset of the natural numbers of positive upper density there necessarily exist two distinct elements whose difference is given by a perfect square. In this article we present a new and simple proof of this result by adapting an argument originally developed by Croot and Sisask to give a new proof of Roth's theorem.

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