

# Kőnig = Ramsey

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## Abstract

Ramsey's theorem and Kőnig's tree lemma are two famous results from infinite combinatorics, which at first glance seem unrelated. The former talks about colouring subsets of finite sets, while the latter is more akin to a choice principle, allowing us to find infinite paths within trees. They share one moral similarity though: both establish order within seemingly chaotic, infinite objects. We make this precise, by proving that a generalized Kőnig's lemma holds on a category if and only if it has the Ramsey property.