

THE HANOI GRAPH H_4^3

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Abstract

Metric properties of Hanoi graphs H_p^n are not as well understood as those of the closely related, but structurally simpler Sierpiński graphs S_p^n . The most outstanding open problem is to find the domination number of Hanoi graphs. Here we concentrate on the first non-trivial case of H_4^3 , which contains no 1-perfect code. The metric dimension and the dominator chromatic number of H_4^3 will be determined as well. This leads to various conjectures for the general case and will thus provide an orientation for future research.

Keywords: Hanoi graphs, Sierpiński graphs, metric dimension, domination number, dominator chromatic number.

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