


Domination type parameters of Pell graphs*

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Abstract

Pell graphs are defined on certain ternary strings as special subgraphs of Fibonacci cubes of odd index. In this work the domination number, total domination number, 2-packing number, connected domination number, paired domination number, and signed domination number of Pell graphs are studied. Using integer linear programming, exact values and some estimates for these numbers of small Pell graphs are obtained. Furthermore, some theoretical bounds are obtained for the domination numbers and total domination numbers of Pell graphs.

Keywords: Pell graphs, Fibonacci cube, domination number, integer linear programming.


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Parametri dominacijskega tipa Pellovih grafov*

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Povzetek

Pellovi grafi so definirani na določenih ternarnih nizih kot posebni podgrafi Fibonaccijevih kock lihega indeksa. V tem članku preučujemo dominacijsko število, skupno dominacijsko število, 2-pakirno število, povezano dominacijsko število, parno dominacijsko število in predznačeno dominacijsko število Pellovih grafov. Z uporabo celoštevilskega linearnega programiranja poiščemo natančne vrednosti in nekatere ocene za ta števila majhnih Pellovih grafov. Poleg tega poiščemo teoretične meje za dominacijska števila in skupna dominacijska števila Pellovih grafov.

Ključne besede: Pellovi grafi, Fibonaccijeva kocka, dominacijsko število, celoštevilsko linearno programiranje.

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