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The 4-girth-thickness of the complete graph

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Abstract: In this paper, we define the 4-girth-thickness $\theta(4, G)$ of a graph G as the minimum number of planar subgraphs of girth at least 4 whose union is G . We prove that the 4-girth-thickness of an arbitrary complete graph K_n , $\theta(4, K_n)$, is $\left\lceil \frac{n+2}{4} \right\rceil$ for $n \neq 6, 10$ and $\theta(4, K_6) = 3$.

Keywords: Thickness, planar decomposition, girth, complete graph.

Math. Subj. Class.: 05C10

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4-debelina ožine polnega grafa

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Povzetek: V tem članku definiramo 4-debelino ožine $\theta(4, G)$ grafa G kot najmanjše število ravninskih podgrafov ožine najmanj 4, katerih unija je G . Dokažemo, da je 4-debelina ožine poljubnega polnega grafa K_n , tj. $\theta(4, K_n)$, enaka $\left\lceil \frac{n+2}{4} \right\rceil$ za $n \neq 6, 10$ in $\theta(4, K_6) = 3$.

Ključne besede: Debelina, ravninska dekompozicija, ožina, polni graf.

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