

# Signed graphs with two eigenvalues and vertex degree five\*

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## Abstract

It is known that a signed graph with exactly 2 eigenvalues must be regular, and all those whose vertex degree does not exceed 4 are known. In this paper we characterize all signed graphs with 2 eigenvalues and vertex degree 5. We also determine all signed graphs with 2 eigenvalues and 12 or 13 vertices, which is a natural step since those with a fewer number of vertices are known.

*Keywords:* Regular signed graph, adjacency matrix, weighing matrix, bipartite double.

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# Označeni grafi z dvema lastnima vrednostima in stopnjo vozlišča pet\*

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## Povzetek

Znano je, da je označeni graf z natanko 2 lastnima vrednostima regularen, in vsi tisti, katerih stopnja vozlišč ne presega 4, so znani. V tem članku karakteriziramo vse označene grafe z 2 lastnima vrednostima in stopnjo vozlišča 5. Določimo tudi vse označene grafe z 2 lastnima vrednostima in 12 ali 13 vozlišči, kar je naraven korak, saj so tisti z manjšim številom vozlišč znani.

*Ključne besede: Regularen označeni graf, matrika sosednosti, utežna matrika, dvodelni dvojniki.*

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