

ON REGULAR SIGNED GRAPHS WITH THREE EIGENVALUES

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Abstract

In this paper our focus is on regular signed graphs with exactly 3 (distinct) eigenvalues. We establish certain basic results; for example, we show that they are walk-regular. We also give some constructions and determine all the signed graphs with 3 eigenvalues, under the constraint that they are either signed line graphs or have vertex degree 3. We also report our result of computer search on those with at most 10 vertices.

Keywords: adjacency matrix, eigenvalue, regular signed graph, signed line graph, block design.

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