LINE SEGMENTS ON THE BOUNDARY OF THE NUMERICAL RANGES OF SOME TRIDIAGONAL MATRICES∗

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Abstract. Tridiagonal matrices are considered for which the main diagonal consists of zeroes, the sup-diagonal of all ones, and the entries on the sub-diagonal form a geometric progression. The criterion for the numerical range of such matrices to have line segments on its boundary is established, and the number and orientation of these segments is described.

Key words. Numerical range, Tridiagonal matrices, Flat portions.

AMS subject classifications. 15A60.

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