NEW ESTIMATIONS FOR DISCRETE STURM–LIOUVILLE PROBLEMS

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Abstract. In this paper, discrete Sturm–Liouville problem with potential function $q(n)$ is considered. Representations of solutions having potential function $q(n)$ in their kernels are obtained. From this point of view, we acquire asymptotic formulas for eigenfunctions and behaviors of eigenfunctions for the problems are analyzed and illustrated by graphics and tables. We find the eigenfunctions corresponding some eigenvalues. Also, we show the number of eigenvalues increases as $n$ increases.