
Methodological aspects of automatic generating problems on linear algebra

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The article deals with the automatic compilation of tasks on linear algebra. The algorithms of generating matrix of any size with a specified determinant or of a given rank; matrix equations, systems of linear equations, including with a parameter, are proposed. In addition, the paper describes algorithms generating tasks on linear operators and quadratic forms. These algorithms have been successfully tested in practice. Using them one can produce unlimited number of variants of tests conducted by the Department of Higher mathematics in the first semester in the module «Matrix and the System of Linear equations», as well as variants for individual tasks and boundary control in the module «Linear algebra». A separate file with all the answers inclusive, in some cases, the intermediate ones is simultaneously generated.

Keywords: *matrix, automatic generation, determinant, rank, random numbers, inverse matrix, system of linear equations, parameter, vectors, basis, solution.*

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