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A tool for evaluating solution economy of algebraic transformations.

Summary: In this paper we consider student solutions to tasks on the conversion of propositional formulas to disjunctive and conjunctive normal forms. In our department, students solve such exercises using a computerized environment that requires correction of every direct mistake but does not evaluate suitability of the steps. The paper describes implementation of an additional tool for analyzing these steps. This tool compares the students' steps with an “official algorithm” and possible simplification operations and checks for 20 deviations from the algorithm. The tool is applied to solutions from two student sessions and the paper analyzes the data on algorithmic mistakes.

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