

Applications of Autonomous Computational Methods and In Online Learning

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To find the answers to qualitative research questions it is possible to find related mathematical description and then construct explicit solutions.

Solution method (if exists) is determined only by available algebraic operations and the form of given equations and other mathematical constraints. Finding a solution by using only algebraic properties without knowing any prior knowledge about the solution procedure is a very complex mathematical problem.

In some cases, by using autonomous computational method, it is possible to find a step-by-step solution of selected algebraic equation by using information only about algebraic operations and the form of the equations. Selected results will be presented. Solutions created by the computational algorithms can be used in the future calculations to solve future mathematical problems.

Autonomous computational methods can be applied for autonomous development of scientific theories which are based on finite number of mathematical operations. Autonomous computational methods reduce the number of possible errors and allow processing of large amount of scientific data in large scale, parallel, and distributed way.

Automatically generated mathematical results and related computer code can be used to construct assignments in online learning systems.