

More on closed form solvable difference equations and their systems

Bratislav D. Iričanin¹

¹Department for Applied Mathematics, Faculty of Electrical Engineering, University of Belgrade, Serbia, iricanin@etf.rs

There is a growing number of papers devoted to the qualitative analysis of difference equations. Unlike this, only a small number of papers deal with explicit solving of some particular nonlinear difference equations, i.e., obtaining their solutions in the so-called closed form. Certainly, this is not an easy problem, at least not routinely, but in the most cases the problem is, unfortunately, not solvable. Despite, we believe that an unavoidable step, also even in the qualitative analysis, still had to be very patiently checked in terms of the solvability of the difference equation or their systems in a closed form. Thus plausibly obtained form of solution, of course, does not rule out further need for an additional qualitative analysis. However, that step naturally can greatly simplify and make more efficient and comprehensive even qualitative analysis.

In this talk we will describe the achievement of solutions of some new significant difference equations and their systems of higher order in a closed form. There are some equations the solutions of which in closed form have not appeared in the literature hitherto. It can be said that this talk continues in logic way long-standing efforts of our authors' team from Belgrade and Brno, which have been described in some of the recent work systematized in references [1], [2] and [3] listed in the bibliography.

References

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- [3] S. Stević and B. Iričanin, On some solvable classes of difference equations and systems of equations, in: 10th International Conference Progress on Difference Equations PODE 2016, May 17th-20th, 2016, Riga, Latvia, ISBN 978-9934-18-150-4, Riga, (2016), p. 12, http://www.lu.lv/fileadmin/user_upload/lu_portal/projekti/pode2016/PODE-2016-iekslaps.pdf.