

## Quasigroup functional equations and graphs

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A. Krapež and D. Živković proved that there is a bijective correspondence between classes of parastrophically equivalent parastrophically uncancellable generalized quadratic functional equations on quasigroups and 3-edge-connected cubic (multi)graphs. Let  $(u_n)$  be the sequence of numbers of classes of such equations with  $n$  variables (i.e. the numbers of corresponding graphs with  $2(n - 1)$  vertices). Using a computer, the graphs are constructed with up to ten vertices and thus the results  $u_2 = 1, u_3 = 1, u_4 = 2, u_5 = 4$  obtained by other authors are verified and a new one that  $u_6 = 14$  is proved.

An outline is given for the method of finding a general solution of any parastrophically uncancellable generalized quadratic quasigroup functional equation.

The problem of F. M. Sokhats'kyi, concerning a property which distinguishes visually two parastrophically nonequivalent equations with four variables is solved. Another problem of finding a general formula for  $(u_n)$  is posed.

This is report on a joint work with S. K. SIMIĆ and D. V. TOŠIĆ.