1077-H1-1423   **Daniel J Katz*** (`katzd@guilford.edu`), Guilford College, 5800 W Friendly Ave, Greensboro, NC 27410. *Critical sets in Futoshiki squares.* Preliminary report.

Of the mathematical questions inspired by the popularity of Sudoku, one of the most intriguing is the question of how many givens (initially provided entries) a Sudoku requires to be uniquely solvable. It is commonly accepted that the required number is 17, but as of this writing, no proof of this lower bound has been found. In a sense, the minimal-entry Sudoku problem is an offshoot of the study of critical sets in Latin squares (minimal subsets that uniquely complete to a Latin square), but the additional subsquare constraint in a Sudoku complicates things considerably.

Futoshiki, a puzzle which comes from Japan and has recently gained popularity in the United Kingdom, is another puzzle type that adds a constraint to the Latin Square; in this case, the new constraint is the introduction of "greater than" clues between certain pairs of adjacent cells. Thus, the Futoshiki has two types of givens, numbers and comparisons, and the family of Futoshiki-critical sets is a generalization of the critical sets in Latin squares. I will discuss some open problems concerning these Futoshiki-critical sets, compare to what is known about Latin squares, and present some preliminary results. (Received September 20, 2011)