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**Gregory V. Bard\*** (bard@fordham.edu), Dept of Math, John Mulcahey Hall, Fordham University, The Bronx, NY 10458. *Exploring Game Theory with SAGE, the open-source competitor to Maple, Mathematica, Matlab and MAGMA.*

Game theory can be an exciting and refreshing topic for students of several levels, with applications in economics, military science, and decision making. When there are two players, the equations are degree one, and thus it is a popular topic to study the applications of linear programming and probability. The SAGE computer algebra package is the open-source competitor to Maple, Matlab, Mathematica, and MAGMA. This talk will show how SAGE can be used to explore game theory, and assist in the computation of Nash Equilibria, as well as find strictly- and weakly-dominated strategies.

The focus will be on the three bridges game, where an escaped convict desires to elude capture by crossing one of three bridges of varying degrees of structural integrity, balancing the need to avoid capture with the risk of the bridge collapsing.

The talk will be entirely comprehensible to those without any knowledge of game theory. (Received September 22, 2010)