1056-03-105 **Corneliu A. Bodea**, **Arthur Charlesworth**, **Diana A. Iovan** and **Andrew D. Jones***, 28 Westhampton Way, Department of Mathematics & Computer Science, University of Richmond, Richmond, VA 23173. *Computer-Created Human-Comprehensible Logic Games.* Preliminary report.

A *logic game* is a pair (AxiomSystem, Theorem) consisting of an axiom system and a formal theorem within that axiom system. The human player of the game is challenged to prove the formal theorem using the inference rules of the axiom system. A logic game can also be presented as a multiple choice question for which exactly one of the choices is a provable (alternatively, non-provable) formal theorem. The human player can specify the level of difficulty in the propositional logic games created by our software.

A *model* of an axiom system is an interpretation of the axioms such that all the axioms are true. Our computer system integrates a component for simultaneously creating axioms as it selects the inference rules in the proof of the eventual theorem, a component using forward-chaining to discover formal theorems from axioms, and a component using models ensuring that the created axiom system is consistent and does not have redundant axioms. (Received July 27, 2009)