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P R Solis* (psolis@mit.edu), 100 Memorial Drive, Rm 8-4c, Cambridge, MA 02142. *The Kauffman-Harary Conjecture.*

Colorability is a tool used in knot theory. It involves assigning integers values to the strands of a knot so that certain congruences hold at the crossings. The coloring number of a knot is the number of different colors needed to color the knot. The subject of this talk is the the Kauffman–Harary Conjecture, which predicts the values of the coloring number for alternating knots. The conjecture has been proven for certain subclasses of alternating knots with additional structure. Using matrix representations of knots, we provide an argument for the conjecture using only the assumption that the knot is alternating; that is we offer the first proof of the entire conjecture. We also offer some preliminary ideas on how to prove the generalized conjecture, which applies to links. (Received August 21, 2007)