1014-05-790 **Ronald J. Clark*** (rclark@math.ucla.edu), UCLA Mathematics Department, Box 951555, Los Angeles, CA 90095-1555. *On the Degree of Regularity for the Equation $x_1 + x_2 + \cdots + x_n - ay = 0$.* Preliminary report.

A linear homogeneous equation $\mathcal{E}$ with nonzero integer coefficients is r-regular if for every r-coloring of the natural numbers there is a monochromatic solution to $\mathcal{E}$. The equation $\mathcal{E}$ is regular if it is r-regular for all $r \geq 1$. Rado's Theorem for single equations states that an equation is regular if and only if some nonempty subset of its coefficients sums to zero.

If an equation is not regular, then there exists a greatest integer r, called the degree of regularity, for which the equation is r-regular. In this talk, I discuss the degree of regularity for the family of equations $x_1 + x_2 + \cdots + x_n - ay = 0$, where $n \geq 1$ and $a \neq 0$ are fixed integers. (Received September 24, 2005)