1077-05-2802   **Andy Parrish*** (`atparrish@ucsd.edu`). *An additive version of Ramsey's theorem.*

Consider a finite edge-coloring of the complete graph K_n on vertices labeled $1, \ldots, n$. Ramsey's theorem tells us that there are monochromatic complete subgraphs of arbitrary size (depending on n). We show that such a subgraph may be found so that its vertices satisfy a given linear equation, so long as the equation is "graph-regular." The graph-regular equations have an algebraic characterization, and include $x_1 + \ldots + x_k = y_1 + \ldots + y_k$ for $k > 2$. (Received September 22, 2011)