

1086-VN-1410

Vesta Coufal, Rob Ray and John J. Villalpando* (jvillalp@callutheran.edu), California Lutheran University, 60 West Olsen Road, Thousand Oaks, CA 91360, and **Kathi A. Yerion.**

The minimum cardinality of the range of irreducible $L(2,1)$ Colorings.

An $L(2,1)$ coloring of a graph is a mapping from the vertex set of a graph to the non-negative integers such that integers on adjacent vertices differ by at least two, and integers on vertices distance two apart differ by at least one. We consider the added irreducibility restriction that at no vertex can the integer be decreased without violating these $L(2,1)$ coloring requirements. Define κ , the irreducible $L(2,1)$ coloring number of a graph, to be the least number of distinct integers required to produce such a coloring of the graph. We determine κ for various classes of graphs. (Received September 21, 2012)