

1086-11-275

Leslie Horton* (lhorton@wmcarey.edu), William Carey University, Box 164, 498 Tuscan Avenue, Hattiesburg, MS 39401. *Sunburst Graphs and Independent Sets.*

The enumeration of independent vertex sets in graphs was inaugurated by Prodinger and Tichy who defined the Fibonacci number $f(G)$ of a graph G to be the total number of independent vertex sets in G . This counting was refined by Hopkins and Staton who defined, for nonnegative k , the parameter $f_k(G)$ to be the number of k -element vertex sets in G . They proposed using the obvious identity

$$\sum_{k \geq 0} f_k(G) = f(G)$$

to generate combinatorial identities. The purpose of this talk will be the determination of these parameters for a class of graphs, the "Sunburst Graphs," defined here for the first time. The resulting identity involves the well-known Pell-Lucas numbers. (Received August 15, 2012)