

1043-05-59

Alison Marr, N. C.K. Phillips and **W. D. Wallis*** (wdwallis@rocketmail.com), Department of Mathematics, Southern Illinois University, Carbondale, IL 62901-4408. *Bimagic Labellings*.

An *edge-magic (total) labeling* λ of a graph G is a one-to-one mapping from $V(G) \cup E(G)$ onto the set of integers $\{1, 2, \dots, n\}$ for which there exists a constant k such that $\lambda(x) + \lambda(xy) + \lambda(y) = k$ whenever x and y are adjacent vertices. In a *bimagic* labeling, there are *two* constants k_1 and k_2 such that all sums of the specified type equal one or other of those two sums. We discuss edge-bimagic labelings of graphs for which no edge-magic labeling exists.

In particular, two cases are of special interest: when the number of edges with one sum is (approximately) the same as the number with the other; or when all edges but one have the common sum. (Received August 14, 2008)