

WICHITA STATE UNIVERSITY

Department of Mathematics and Statistics

*The Lecture Series in the
Mathematical Sciences Presents Our Guest:*

Dr. Walter Wallis

Southern Illinois University, Carbondale, IL

"Totally Magic Labelings and Injections"

Abstract:

Given a graph G , a total labeling of G is a one-to-one map from $V(G) \cup E(G)$ to $\{1, 2, \dots, |V(G) \cup E(G)|\}$. A total labeling l is called vertex magic if there is a constant h such that, for every vertex x of G , the sum of $l(x)$ and all the $l(xy)$ for y adjacent to x equals h , and edge magic if there is a constant k such that, for every edge xy of G , $l(x) + l(xy) + l(y)$ equals k . A graph is totally magic if it has a labeling that is simultaneously vertex magic and edge magic.

We shall discuss the existence of totally magic graphs. They appear to be very rare, but the existence problem is not yet solved. A one-to-one map from G to the positive integers is called a (vertex, edge, totally) magic injection if it has the relevant magic constant property or properties (but the maximum label may be greater than $|V(G) \cup E(G)|$). Even totally magic injections are rare; we shall discuss their existence.

Friday, April 27, 2007
3:00 PM in 372 Jabara Hall

*Please come join us for refreshments before the lecture
at 2:30 p.m. in room 353 Jabara Hall.*