1073-05-180 **Gexin Yu*** (`gyu@wm.edu`), Williamsburg, VA. *Routing numbers of paths and cycles.* Preliminary report.

Let G be a connected graph. Initially, each vertex v of G is occupied by a "pebble" that has a unique destination $\pi(v)$ in G (so that π is a permutation of the vertices of G). It is required that all the pebbles be routed to their respective destinations by performing a sequence of moves of the following type: A disjoint set of edges is selected, and the pebbles at each edge's endpoints are interchanged. Define $rt(G, \pi)$ to be the minimum number of steps to route the permutation π and the routing number $rt(G)$ of G to be the maximum of $rt(G, \pi)$ over all permutation π. In this talk, we will consider the routing numbers of paths and cycles. (Received August 01, 2011)