1098-05-264 **Kevin T. Campbell***, 330 North Washington St., Gettysburg, PA 17325. *Covering Everything: An Exploration of h-Critical Numbers.*

Given an h, m, and a group $\mathbb{Z}_n$, $\rho(\mathbb{Z}_n, m, h)$ defines the smallest possible size of an $h-$fold sumset of A, where A is a subset of $\mathbb{Z}_n$ and A has size m. We define an $h-$fold sumset of A as the set that is given by the sum of h not necessarily distinct values in a set A, where each value is taken modulo n. An $h-$critical number is the minimum value of m such that $\rho(\mathbb{Z}_n, m, h) = n$. That is, if a subset A of a finite abelain group G is at least the size of the $h-$critical number of G, then the $h-$fold sumset of A will span G. Thus far, I have created bounds for all $h-$critical numbers, found an explicit equation for any $h-$critical number for all values of h where the ambient group has a size that is an even number or a prime, and I have a conjecture to cover all other cases. (Received January 27, 2014)