1038-05-189 **Noah Prince*** (nprince@math.uiuc.edu). *Nordhaus-Gaddum Bounds for k-Domination in Graphs.*

A k-dominating set of a graph G is a set S of vertices of G such that every vertex not in S has at least k neighbors in S. The k-domination number of G, written $\gamma_k(G)$, is the size of the smallest k-dominating set in G. We derive sharp upper and lower bounds on $\gamma_k(G) + \gamma_k(\overline{G})$ and $\gamma_k(G)\gamma_k(\overline{G})$, where $\overline{G}$ is the complement of G. We use the results for $k = 2$ to prove a conjecture of Alon, Balogh, Bollobás, and Szabó on game domination numbers. (Received February 08, 2008)