1079-05-317 **Karen L. Collins*** (kcollins@wesleyan.edu), Dept. of Mathematics and Computer Science, Middletown, CT 06459, and **Ann Trenk** (atrenk@wellesley.edu), Dept. of Mathematics, Wellesley, MA. *Distinguishing chromatic bounds like Nordhaus-Gaddum.*

Albertson and Collins defined the distinguishing number of graph as the minimum number of colors needed to color the vertices of so that only the trivial automorphism preserves the colors. Collins and Trenk defined the distinguishing chromatic number to be the minimum number of colors needed for a labeling which is both proper and distinguishing. We will generalize the classic Nordhaus-Gaddum theorem for the chromatic number, namely that for G a graph,

$$\chi(G) + \chi(\overline{G}) \leq |V(G)| + 1$$

to the distinguishing chromatic number and provide a new characterization of graphs that achieve equality in the above bound. (Received January 17, 2012)