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**Ping Zhang\*** ([ping.zhang@wmich.edu](mailto:ping.zhang@wmich.edu)), Department of Mathematics, Western Michigan University, Kalamazoo, MI 49008. *Two Theorems on Four Colorings.*

A complete coloring of a graph  $G$  is a proper vertex coloring of  $G$  having the property that for every two distinct colors  $i$  and  $j$  used in the coloring, there are adjacent vertices colored  $i$  and  $j$ . The three parameters chromatic number, Grundy number and achromatic number of a graph  $G$  all arise from complete colorings of  $G$ . Three triples of positive integers which can be realized as the values of these three parameters of some graph are determined. The related question is answered when another coloring parameter called the irredundant chromatic number is added to these three. (Received September 20, 2010)