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Graphs with large distinguishing chromatic number

The distinguishing chromatic number $\chi_D(G)$ of a graph G is the minimum number of colours required to properly colour the vertices of G so that the only automorphism of G that preserves colours is the identity. It is known that for a graph G of order n , the bound $1 \leq \chi_D(G) \leq n$ holds, with equality in the upper bound only for complete multipartite graphs. We discuss properties of graphs with large distinguishing chromatic number and characterize the graphs G of order n satisfying $\chi_D(G) = n - 1$ or $\chi_D(G) = n - 2$.