

Extremal questions for H -colorings of graphs

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An H -coloring of a finite, simple graph G is a map from the vertices of G to the vertices of a finite graph H (without multiple edges, but possibly with loops) that preserves edge adjacency. H -colorings generalize many important graph theoretic notions, such as proper q -colorings (via $H = K_q$) and independent sets (via H as an edge with a loop on one endvertex). We will

consider the following extremal question: given a family of graphs \mathcal{G} , which graph in the family has the largest number H -colorings for a given H ? We present several recent results for $\mathcal{G}(n, \delta)$, the family of graphs on n vertices with minimum degree δ .