Given a graph G, the cochromatic number $z(G)$ of G is the fewest number of parts into which $V(G)$ must be partitioned so that each part induces in G either an empty or complete graph. The authors survey some of the most interesting open questions involving cochromatic numbers. For example, let $z(n)$ denote the maximum cochromatic number among all graphs with order n. Then it can be shown that $z(n) = \Theta(\frac{n}{\ln n})$. However, even for some small values of n (e.g. $n = 12$), the exact value of $z(n)$ is unknown. This paper includes open questions relating the cochromatic number and size, genus, chromatic number and clique number.

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