Towards a Theory of Graph Bipartitions, II

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This talk will be a continuation of the one Professor Hedetniemi presented on September 13. The abstract of that talk is below.

Let $G = (V, E)$ be a graph and let $S \subset V$ be an arbitrary subset of the vertex set $V$. Then $\pi = \{S, V \setminus S\}$ is called a bipartition of $G$. This talk presents a wide variety of bipartitions that have appeared in the graph theory literature and attempts to place them within a general framework, in which various properties are associated with each of the following five subgraphs: (i) the subgraph $G[S]$ induced by $S$, (ii) the subgraph $G[V \setminus S]$ induced by $V \setminus S$, (iii) the bipartite subgraph $G[\pi]$ defined by the set of edges between $S$ and $V \setminus S$, (iv) the subgraph $G[S] \cup G[\pi]$, and (v) the subgraph $G[V \setminus S] \cup G[\pi]$. In the process of creating this framework hundreds of problems for further study are suggested.