

Zbl 479.05054

Erdős, Paul; Schuster, S.

Existence of complementary graphs with specified independence numbers. (In English)

The theory and applications of graphs, 4th int. Conf., Kalamazoo/Mich. 1980, 343-349 (1981).

[For the entire collection see Zbl 459.00006.]

For a graph G , $\beta(G)$ will denote the (vertex)-independence number and $\beta_1(G)$ the edge-independence number. In a paper of G. Chartrand and S. Schuster [Trans. New York Acad. Sci. II. Ser. 36, 247-251 (1974; Zbl 275.05110)] sharp upper and lower bounds were given for $\beta(G) + \beta(\bar{G})$, $\beta(G) \cdot \beta(\bar{G})$, $\beta_1(G) + \beta_1(\bar{G})$ and $\beta_1(G) \cdot \beta_1(\bar{G})$. For example, it was shown for a graph G on p vertices that $\lfloor P/2 \rfloor \leq \beta_1(G) + \beta_1(\bar{G})$ and $0 \leq \beta_1(G) \cdot \beta_1(\bar{G}) \leq \lfloor P/2 \rfloor^2$. In this paper the existence of complementary graphs that realize the independence numbers and edge-independence numbers in the intervals allowed by the Chartrand-Schuster inequalities are considered.

R. Faudree

Classification:

05C70 Factorization, etc.

05C35 Extremal problems (graph theory)

05C55 Generalized Ramsey theory

Keywords:

independence numbers; edge-independence numbers