
Zbl 483.05053**Chung, F.R.K.; Erdős, Paul; Graham, Ronald L.***On the product of the point and line covering numbers of a graph.* (In English)**Combinatorial mathematics, 2nd int. Conf., New York 1978, Ann. New York Acad. Sci. 319, 597-602 (1979).**

[For the entire collection see Zbl 468.00005.]

For a graph $G = (V, E)$ let the point covering number $\alpha_0(G)$ and the line covering number $\alpha_1(G)$ be defined as follows: $\alpha_0(G) = \min\{|X| : X \subseteq V \text{ and every } e \in E \text{ contains some } x \in X\}$ $\alpha_1(G) = \min\{|Y| : Y \subseteq E \text{ and every } v \in V \text{ is contained in some } y \in Y\}$. The authors answer conjectures of *F. Harary* and *J.A. Kabell* (in the same proceedings, Zbl 483.05037) by proving that:

$$\alpha_0(G)\alpha_1(G) \geq n - 1,$$

and

$$\alpha_0(G)\alpha_1(G) \leq \begin{cases} \frac{n^2-1}{2} & \text{for } n \text{ odd,} \\ \frac{n^2-4}{2} & \text{for } n \text{ even.} \end{cases}$$

(cases of equality are characterized).

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Classification:

05C70 Factorization, etc.

05C35 Extremal problems (graph theory)

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point covering number; line covering number