ON THE GRAPHS WITH THE GLOBAL SECURITY NUMBER EQUAL TO $\left\lceil \frac{|V|}{2} \right\rceil$.

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Let $G = (V, E)$ be a graph. A global secure set $SD \subseteq V$ is a dominating set which also satisfies a condition that $|N[X] \cap SD| \geq |N[X] - SD|$ for every subset $X \subseteq SD$. The (global) secure sets were defined by Brigham et al. in [1]. We know that every global secure set must contain at least half of the vertices of the graph. We would like to present graphs with the global secure sets of cardinality equal to $\left\lceil \frac{|V|}{2} \right\rceil$.

Keywords: secure set, dominating set.

AMS Subject Classification: 05C69, 05C05.

References

[1] R.C. Brigham, R.D. Dutton, S.T. Hedetniemi, Security in graphs, Discrete Applied Math. 155 (2007) 1708–1714.