

1106-05-1980

Mercedes S. Coleman* (mcoleman@lamar.edu), Lamar University, Dept of Math Box 10047, 211 Redbird LN, Beaumont, TX 77705-9801. *How to best defend against an attack that can't be thwarted.*

Let $G=(V, E)$ be a finite simple graph. Security in G is the ability for $S \subseteq V$ to defend against any attack on the vertices of S . In an attack on S , each vertex in $N(S)-S$, where $N(S) = \{y \in V : xy \in E \text{ for some } x \in S\}$, gets to attack one of its neighbors in S . In a defense of S , each vertex in S gets to defend itself or one of its neighbors in S . A defense of S thwarts an attack on S if every vertex of S has at least as many defenders as attackers. An algorithm is described for setting up a defense against an attack which can't be thwarted. (Received September 15, 2014)