Abstract

A square difference 3-equitable labeling of a graph $G$ with vertex set $V$ is a bijection $f$ from $V$ to $\{1,2,\ldots,|V|\}$ such that if each edge $uv$ is assigned the label -1 if $|f(u)^2 - f(v)^2| \equiv -1 \pmod{4}$, the label 0 if $|f(u)^2 - f(v)^2| \equiv 0 \pmod{4}$ and the label 1 if $|f(u)^2 - f(v)^2| \equiv 1 \pmod{4}$.
\[ f(v) \]

If \( f(v)^2 \equiv 1 \pmod{4} \), then the number of edges labeled with \( i \) and the number of edges labeled with \( j \) differ by at most 1 for \(-1 \leq i,j \leq 1\). If a graph has a square difference 3-equitable labeling, then it is called square difference 3-equitable graph. In this paper, we investigate the square difference 3-equitable labeling behavior of middle graph of paths, fan graphs, \( P_{2n} \), \( S_1 \), \( mK_3 \), triangular snake graphs and friendship graphs.

References


Index Terms

Computer Science          Applied Mathematics

Keywords
Square difference 3-equitable labeling, square difference 3-equitable graphs