Abstract

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

...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 behaviour 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