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SOME NEW CLASSES OF GRACEFUL TREES

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Abstract

In this paper we give graceful labelings to n-distant trees T with central path $H = x_0x_1 \cdots x_r$ satisfying the property that every pendant vertex of T has distance n from H, the degree of each vertex of H except two extreme ends is greater than 3, there is a path P in $T - H$ incident on x_0 such that each non-leaf of P has an even degree, excluding P each vertex of $T - H$ has an odd degree, the total number of vertices T at each distance $j, 1 \leq j \leq n-1$, from H is $\equiv 1$ $(mod\ 4)$ and one of the following conditions.

(1) $r \equiv 0$ $(mod\ 4)$ and every vertex of H has an odd degree.

(2) $r \equiv 1$ $(mod\ 4)$ and x_0 has even degree and every other vertex of H has an odd degree.

(3) $r \equiv 2$ $(mod\ 4)$, any one of the pairs of vertices (x_0, x_1), (x_0, x_{r-1}) and (x_{r-2}, x_{r-1}) have even degrees and each of the remaining vertices of H has an odd degree.

(4) $r \equiv 3$ $(mod\ 4)$, x_r has even degree and every other vertex of H has an odd degree.

Key Words : *Graceful labeling, n distant tree, Component moving transformation, Transfer of the first type, BD8TF.*

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