Even Harmonious Graphs
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A graph G with q edges is said to be harmonious if there is an injection f from the vertices of G to the group of integers modulo q such that when each edge xy is assigned the label f(x) + f(y)(mod q), the resulting edge labels are distinct. If G is a tree, exactly one label may be used on two vertices. A function f is said to be an even harmonious labeling of a graph G with q edges if f is an injection from the vertices of G to the integers from 0 to 2q and the induced function f from the edges of G to 0, 2, …, 2(q-1) by f(xy) = f(x) + f(y)(mod 2q) is bijective. This research examines various graphs and their even harmonious labelings.

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