1163-F1-1612 **Dorian Smith*** (smi01055@umn.edu), 2089 Carter Ave, Saint Paul, MN 55108. *The Radio Number of Banana Tree Graphs.*

Let G be a connected graph. For any two vertices u and v, let $d(u, v)$ denote the distance between u and v in G. The diameter of G is the maximum distance between any pair u, v and is denoted by $\text{diam}(G)$. The radio k-labeling for G is a function $f : V(G) \to \{0, 1, 2, 3, \ldots, k\}$ such that $\|f(u) - f(v)\| \geq \text{diam}(G) - d(u, v) + 1$. The radio number of a graph G, denoted by $rn(G)$, of a graph G is the smallest such k such that G has a radio k-labeling. The radio number of various trees are known. Our tree of interest is the banana tree. The following definitions are needed to define a banana tree. A leaf is a vertex with only one neighbor. A m-star is defined as a tree with m leaves and one apex. We define the (n, m)-banana tree denoted, $B(n, m)$, to be the tree obtained by joining one leaf of each of n copies of a $(m - 1)$- star to a single root. The radio number of a banana tree is known. We study the properties of the radio k-labeling of new trees formed by adjoining vertices and edges to a banana tree. (Received September 15, 2020)