

Every tree with at least two vertices has at least two leaves

The **leaves** of a tree are the nodes with degree 1; all other nodes are **internal nodes**.

Theorem: Every tree T with at least two vertices has at least two leaves.

Proof: Consider a longest path P in T .

Since T is finite, the path begins at some node v and ends at some node w .

We will prove that both endpoints of P are leaves.