

1. Given that $|E| \geq |V|$, this means that there must exist a cycle within graph G . The spanning tree T is a free tree with $V_T = V$ and $E_T \subseteq E$, this means there are at most $V-1$ edges within the spanning tree T . So, the graph G has at least one more edge than the spanning tree T , by putting the edge into the spanning tree T , a new cycle will definitely be formed within the tree, at this time, by taking out another edge of the cycle, a new spanning tree T_2 will be formed, and T_2 is distinct from spanning tree T . Hence, there exist at least two different spanning trees of G .