# On a Generalization of the Friendship Theorem.

According to the classical Friendship Theorem, if G is a finite simple graph such that each two distinct vertices have a unique common neighbor, then G has a dominating vertex. Jian Shen showed that if require only non-neighbors to have a unique common neighbor, then one of the following possibilities hold: i) G has dominating vertex, or ii) G is a strongly regular graph, or iii) G is a bi-regular graph and there exists a positive number λ such that each neighboring pair of vertices has either 0 common neighbors or λ common neighbors. In this talk I will review the results of Jian Shen but using a different approach from his, and extend the results in the bi-regular case.
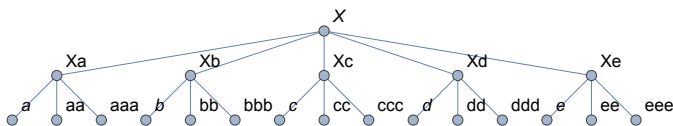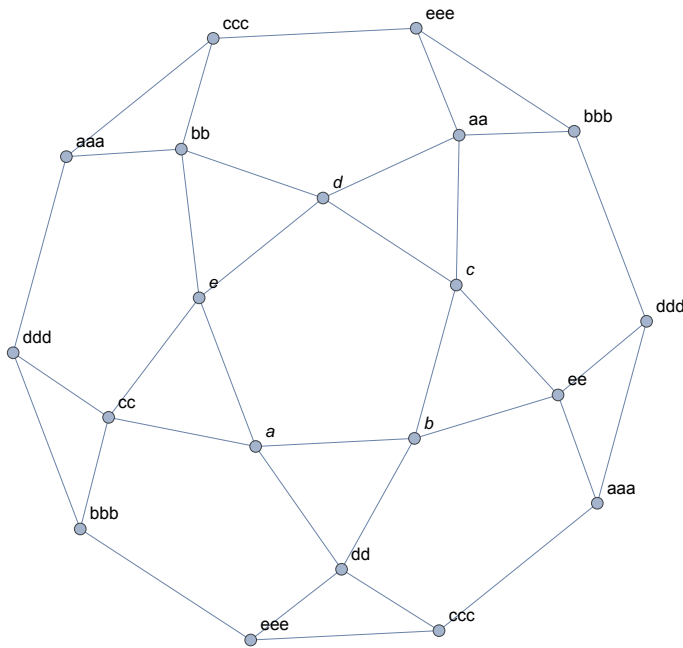
The picture shows a bi-regular graph with 21 vertices such that each pair of non-neighbors have exactly one common neighbor. Points with the same label represent the same vertex.