1106-VN-2303 **Misa Nakanishi*** (nakanishi@2004.jukuin.keio.ac.jp). *The domination number and the independent domination number for a bipartite graph.*

In this paper, a graph G = (V, E) is simple. A set of vertices X such that $N_G[X] = V$ is called a dominating set. The minimum cardinality taken over all minimal dominating sets or all maximal independent sets of G is the domination number $\gamma(G)$ or the independent domination number $i(G)$ respectively. A sufficient condition for $\gamma(G) = i(G)$ was represented in 1978, $K_{1,3}$ - free. A subgraph I is defined as two adjacent vertices v and w and its neighbors such that $d_I(v) \geq 3$ and $d_I(w) \geq 3$. We observe I as a forbidden subgraph for $\gamma(G) = i(G)$ with a simplest proof. A property of I is remarkable for dominating sets of a graph. It characterized 3-connected graphs, where $i(G)$ and $\gamma(G)$ are significantly different indicated in 1994.

We have a different approach to the domination number formulation. A bipartite graph G is decomposed by I, which is $G = I_1 \cup \cdots \cup I_k \cup F$ pairwise disjoint. $\gamma(G_1 \cup G_2) \leq \gamma(G_1) + \gamma(G_2)$ for arbitrary graphs G_1 and G_2. On the basis of it, we present a sufficient condition led to an equation $\gamma(G) = \gamma(I_1) + \cdots + \gamma(I_k) + \gamma(F) = 2k + i(F)$. The k-dominating graph $D_k(G)$ defined in 2014 explains the proof of Theorem. (Received September 16, 2014)