Let \( k \geq 1 \) be an integer. A subset \( D \subseteq V(G) \) is a \((1, k)\)-dominating set of \( G \) if for every vertex \( v \in V(G)\setminus D \) there exist \( u, w \in D \) such that \( vu \in E(G) \) and \( d_G(v, w) \leq k \). If \( k = 1 \), then we obtain the definition of a \((1, 1)\)-dominating set which is also known as a 2-dominating set. If \( k = 2 \), then we have a \((1, 2)\)-dominating set. In the talk we consider a proper \((1, 2)\)-dominating set (i.e. a \((1, 2)\)-dominating set that is not 2-dominating). We present some results concerning \((1, 2)\)-dominating sets, proper \((1, 2)\)-dominating sets and we give some relations between them.

Key Words: dominating set, \((1,2)\)-dominating set, dominating number.

AMS Subject Classification: 05C69, 05C05.

References
