THE OUTER-CONNECTED DOMINATION NUMBER
OF A GRAPH

JOANNA CYMAN
Gdańsk University of Technology, Poland

For a given graph $G = (V, E)$, a set $D \subseteq V(G)$ is said to be an outer-connected dominating set if $D$ is dominating and the graph $G - D$ is connected. The outer-connected domination number of a graph $G$, denoted by $\widetilde{\gamma}_c(G)$, is the cardinality of a minimum outer-connected dominating set of $G$. We study several properties of outer-connected dominating sets and give some bounds on the outer-connected domination number of a graph. We also show that the decision problem for the outer-connected domination number of a graph $G$ is NP-complete even for bipartite graphs.

Keywords: outer-connected domination number, domination number.

AMS Subject Classification: 05C05, 05C69.