

RESOLVING SETS OF DIRECTED CAYLEY GRAPHS FOR THE DIRECT PRODUCT OF CYCLIC GROUPS

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A directed Cayley graph $C(\Gamma, X)$ is specified by a group Γ and an identity-free generating set X for this group. Vertices of $C(\Gamma, X)$ are elements of Γ and there is a directed edge from the vertex u to the vertex v in $C(\Gamma, X)$ if and only if there is a generator $x \in X$ such that $ux = v$. We study graphs $C(\Gamma, X)$ for the direct product $Z_m \times Z_n$ of two cyclic groups Z_m and Z_n , and the generating set $X = \{(0, 1), (1, 0), (2, 0), \dots, (p, 0)\}$. We present resolving sets which yield upper bounds on the metric dimension of these graphs for $p = 2$ and 3 .

Keywords: metric dimension, resolving set, Cayley graph, direct product, cyclic group