THE RAMSEY NUMBER FOR THETA GRAPH VERSUS
A CLIQUE OF ORDER THREE AND FOUR

M.S.A. Bataineh
Department of Mathematics
Yarmouk University
Irbid-Jordan

E-mail: bataineh71@hotmail.com

M.M.M. Jaradat
Department of Mathematics, Statistics and Physics
Qatar University
Doha-Qatar

E-mail: mmjst4@qu.edu.qa

AND

M.S. Bateeha
Department of Mathematics
Yarmouk University
Irbid-Jordan

Abstract

For any two graphs $F_1$ and $F_2$, the graph Ramsey number $r(F_1, F_2)$ is the smallest positive integer $N$ with the property that every graph on at least $N$ vertices contains $F_1$ or its complement contains $F_2$ as a subgraph. In this paper, we consider the Ramsey numbers for theta-complete graphs. We determine $r(\theta_n, K_m)$ for $m = 2, 3, 4$ and $n > m$. More specifically, we establish that $r(\theta_n, K_m) = (n - 1)(m - 1) + 1$ for $m = 3, 4$ and $n > m$.

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