# On Star critical Ramsey numbers related to large cycles versus complete graphs

Chula J. Jayawardene
Department of Mathematics
University of Colombo
Sri Lanka
email: c_jayawardene@maths.cmb.ac.lk

W. Chandanie W. Navaratna
Department of Mathematics
The Open University of Sri Lanka
Sri Lanka
email: wcper@ou.ac.lk

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**Abstract**

Let $K_n$ denote the complete graph on $n$ vertices and $G, H$ be finite graphs without loops or multiple edges. Given any two-coloring of edges of $K_n$, if a copy of $G$ in the first color, red, or a copy of $H$ in the second color, blue is in $K_n$, we write $K_n \to (G, H)$. The Ramsey number $r(G, H)$ is defined as the smallest positive integer $n$ such that $K_n \to (G, H)$. Star critical Ramsey $r_*(G, H)$ is defined as the largest integer $k$ such that $K_{r(G,H)-1} \sqcup K_{1,k} \to (G, H)$. In this paper, we find $r_*(C_n, K_m)$ for $m \geq 6$ and $n \geq (m-3)(m-1)$.

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