

CRITICAL GRAPHS FOR $R(P_n, P_m)$ AND THE STAR-CRITICAL RAMSEY NUMBER FOR PATHS

JONELLE HOOK

*Mount St. Mary's University
Department of Mathematics and Computer Science
Emmitsburg, MD 21727*

e-mail: jhook@msmary.edu

Abstract

The *graph Ramsey number* $R(G, H)$ is the smallest integer r such that every 2-coloring of the edges of K_r contains either a red copy of G or a blue copy of H . The *star-critical Ramsey number* $r_*(G, H)$ is the smallest integer k such that every 2-coloring of the edges of $K_r - K_{1, r-1-k}$ contains either a red copy of G or a blue copy of H . We will classify the *critical graphs*, 2-colorings of the complete graph on $R(G, H) - 1$ vertices with no red G or blue H , for the path-path Ramsey number. This classification will be used in the proof of $r_*(P_n, P_m)$.

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