

# MULTICOLOR RAMSEY NUMBERS FOR SOME SEQUENCES OF GRAPHS

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ABSTRACT. We study the multicolor Ramsey numbers for some sequences of disjoint unions of graphs versus a connected graph. We count  $R(G_1, G_2, \dots, G_k, F)$  where  $G_i$  ( $1 \leq i \leq k$ ) is a disjoint union of some small trees and  $F$  is  $C_m$  for some integer  $m$ . Similarly, we study some other cases of  $F$ . We generalize some results of Faudree and Schelp [Path Ramsey numbers in multicolorings, J. Combin Theory Ser. B 19(1975) 150–160], Bielak [Multicolor Ramsey numbers for some paths and cycles, Discussiones Mathematicae - Graph Theory 29 (2009) 209-218], Dzido [Multicolor Ramsey numbers for paths and cycles, Discuss. Math. Graph. Theory 25 (2005) 57–65] and Shiu et. al. [On some three-Color Ramsey, Graphs Combin. 19(2003) 249–258].

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