



Size multipartite Ramsey numbers for small paths versus books

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Abstract

Given $j \geq 2$, for graphs G and H , the size Ramsey multipartite number $m_j(G, H)$ is defined as the smallest natural number t such that any blue red coloring of the edges of the graph $K_{j \times t}$, necessarily contains a red G or a blue H as subgraphs. Let the book with n pages is defined as the graph $K_1 + K_{1,n}$ and denoted by B_n . In this paper, we obtain the exact values of the size Ramsey numbers $m_j(P_3, H)$ for $j \geq 3$ where H is a book B_n . We also derive some upper and lower bounds for the size Ramsey numbers $m_j(P_4, H)$ where H is a book B_n .

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